

THE AMERICAN BEHAVIORAL SCIENTIST

[formerly P.R.O.D.]

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IN THE NEWS PROGRAMS AND STUDIES • A joint Burmese govt.-Ford F. project of supervised credit in a Burmese village has inventive features that, given its success, will make it a model for widespread community development. Farmers have formed a village cooperative and received an interest-free loan from the Burmese Agriculture and Rural Development Corp. and Ford (total Ford F. costs: \$270M), to purchase tractors and to make low-interest loans to farmers for improvement plans designed by farmers themselves. A Burmese official and a Ford adviser advise and coordinate the plans for a long-range village program. The cooperative expects fiscal independence within five years, freeing govt. funds for investment in other cooperatives. • *Mass. Senior Internship Program in Pub. Admin.*, joint venture of Harvard Grad. School of Pub. Admin., U. of Mass., Boston U., MIT, financed by Carnegie Corp., enters second year. Five two-year internships for college seniors in State govt. offices and studies are available for Fall '61, applications due March 15 (C. F. Mahoney, Comm. of Admin., State House, Boston, Mass.). • U. of Bridgeport will establish a *Human Relations Training Center* in Sept. '61. • U. of Calif. will undertake five-year, \$500M study of present status and extent of anti-Semitism in U.S. • *Brookings Inst.* begins five-year study of taxes and govt. spending at natl., State, local levels, focussing on sources, flexibility of taxes, and "What programs provide what stimulation?" Financed initially by \$750M Ford F. grant, program is directed by economist J. A. Pechman; much research will be farmed out.

UNIVERSITIES • Corporate gifts to higher ed. in 1958-59 were an estimated \$98.5 million to 1,071 institutions, 16% of total voluntary support from all sources, and up from \$39.4 million in 1954-55. Of total, 65% was for plant facilities, student aid, non-contract research; 23% was unrestricted. • Five top donors to independent colleges (through State assoc.) during first three quarters of '60 were U.S. Steel F., Standard Oil of Indiana, Socony Mobile Oil, AT&SF Railways, Intl. Harvester; total from five was \$1.15 million. • Hong Kong's New Asia College, founded in '49 by Chinese refugees, has initiated grad. studies in *New Asia Research Inst.*, interests including studies of Chinese intellectual, literary, institutional history; Rockefeller F. is assisting with \$47.5M grant. • Rutgers U. plans four-bldg. complex for *Inst. of Management and Labor Relations*, for 1961.

GOVERNMENT AND EDUCATION • Federal appropriations under *Natl. Defense Ed. Act* for fiscal '61 are \$99.48 million, \$30 million more than in fiscal '60. Student loans receive \$58.43 million; grad. fellowships \$20.75 million; guidance and counseling programs \$6.5 million; language development programs \$13.8 million.

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Fragmentary Observations on a Close Election

by HERBERT I. ABELSON and REUBEN COHEN

Two Opinion Research Corporation psychologists report some early returns on the social scientific interpretation and analysis of the election. They comment on the nature of computer projections and the achievements of the pre-election polls, and suggest that the TV debates have implications for information-flow hypotheses.

Early on the evening of November 9th a television newscaster observed that we were at that moment in a hiatus between the pollsters, who had made their final predictions of *who*, and the social scientists, who soon enough would begin their explanations of *why*. Lest the silence become deafening, we have several speculations, unhampered by an oversupply of data. Most of these points occurred to us on election night; they may be points of departure for more sophisticated views of the election phenomena.

ELECTRONIC COMPUTERS

The electronic computer was a featured performer on the television election night coverage. Its assigned task was to tote up early returns, make comparisons with available data from past elections, and project the final outcome of the presidential race.

During most of the long evening all three network computers were projecting a Kennedy victory with a popular vote majority of 51 or 52 per cent. Those Nixon supporters who tuned in early in the evening, however, had their morale boosted by the first computer projections (on two networks) which suggested a Nixon victory of landslide proportions. True, these first projections were "experimental" and were made when only one per cent of the total vote was in. But one per cent of the total vote is several hundred thousand—a huge "sample" when compared with the few thousand voters queried in the typical pre-election poll.

Why were the computers badly misled at an early hour on election evening? Neither the computers nor their programmers, after all, can control the order in which election returns are received. Several hundred thousand votes are a great many when compared with the pre-election poll standard, but may

be almost valueless for prediction purposes when judged by sophisticated sampling criteria.

PRE-ELECTION POLLS

The accidental sample may be a limitation to the use of early election returns, but it is no longer a hazard of the sample survey approach to pre-election polls. The polls have other limitations, of course, and must rely to some extent on patterns established in past elections—particularly in handling turnout projections and in treating the undecided voter. The major national polls were divided in their last-minute predictions. The Gallup Poll result favored Kennedy, 51 to 49 per cent; the Roper result favored Nixon by the same margin. Considering the actual split of the popular vote between the two candidates, 50.13 to 49.87 as of November 21st, the poll results must be regarded as a truly remarkable performance.

The polls have been both contributors to and benefactors of the maturation of survey methods in the past 25 years. The early successes of the pre-election polls, from 1935 to 1944, contributed to the acceptance of sample survey methods in commercial, government, and academic applications. The failure of most polls to favor Truman over Dewey in 1948 led to an appreciation of needs for refinement of method and to better understanding of sampling limitations.

In the 1960 campaign, most "trial-heat" results from Labor Day on indicated a close race between Kennedy and Nixon. Voter preferences wavered by no more than a few percentage points from an even split. During the latter stages of the campaign many political observers perceived a sharp swing of voter sentiment favoring Kennedy, a shift reflected neither in the candidate preference

results of the major polls nor in the close election result. A Gallup release in early November, however, provides two clues that may explain the views of the political observers. During the same period in which preferences for the two candidates continued close to even, voter enthusiasm for Nixon declined and voter reaction to the TV debates favored Kennedy as having done the better job. Thus, it was quite possible for observers to note that Kennedy supporters were becoming more outspoken, and Nixon supporters less so, although the balance of actual voter preferences was changing very little.

The complex religious question and its effect was not fully explained. The election result could easily have turned on this question—as well as on a number of other factors. Analysts certainly will explore the 1960 election surveys and returns for a careful study of the religious effects. Speculation is already rife both ways. Some observers cite comparisons of 1956 and 1960 voting patterns to support the suggestion that extra support from Catholics turned the election in Kennedy's favor. This implies that Kennedy would have lost had he been a Protestant, a hypothesis whose plausibility we doubt.

TV DEBATES AND INFORMATION FLOW

Two characteristics of the television confrontations between the candidates were enormous audience size and the appearance of opposing candidates at the same time, so that partisans of either were exposed to both. These aspects are directly relevant to hypotheses developed in a study of the 1940 presidential campaign, and modified and reinforced in subsequent election research: the hypotheses of the two-step flow of information and of the tendency of people to select from the mass media only those stimuli that agree with and reinforce their own viewpoints. Only the first hypothesis is dealt with here. The other probably deserves at least equal space: how do people perceive the opposition candidate when they are "forced" to pay attention to him because of the debate format, when they would other-

wise see or read comparatively little about him?

The two-step flow of information is a departure from the concept of individual communication lines reaching from each radio station and newspaper to its publics. The hypothesis holds that the "opinion leader" mediates between mass media and audience. Certain pivotal people pay more attention than do others to mass communications, and in turn interpret and disseminate what they have learned to less involved members of their peer groups. Later studies have both corroborated and modified the two-step hypothesis.

Enter the TV debates. Their impact as yet is only incompletely assessed, but their focal role in the campaign can hardly be denied; they occupied a central position in nearly all accounts and interpretations of the campaign. The size of their audiences—70 million for the first one according to an ORC private survey—, their campaign importance, and present judgements about the validity of the two-step flow hypothesis suggest that analytic investigations of the reactions of people on TV may lead to further refinements of the hypothesis. For example:

The two-step flow may be so speeded up, because of the exposure of normally less-attentive people to the same stimuli as the influentials, that a radical alteration of the concept may be necessary to reconcile it with the "new era" of communications.

More likely, both the more and less politically active segments of the population watched the debates, but with different response sets. The more active people have long been accustomed to perceive mass media information and impressions as materials for future conversational use. Perhaps the less active people, the opinion followers, viewed the shows as spectacles, in terms of their entertainment value.

Perhaps the effect of the massive audience is to provide an opportunity for a subtle classification of the public. Many opinion followers watched one or more of the debates, many watched none of them. Thus, viewership of debates might be used to categorize the opinion followers.

The Computers and the Election

by JOSEPH TANENHAUS, *New York University*

On election night, November 8th, millions of Americans were treated to a dazzling display of electronic computer wizardry. Although the initial projections by UNIVAC and IBM's 7090 were wide of the mark, the 7090 and RCA's 501 offered consistent predictions that Kennedy would receive about 51 per cent of the popular vote even before the polls closed on the West Coast. Forecasts of the electoral vote and estimates of the odds were somewhat erratic, but nonetheless impressive in view of the wafer-thin margins that separated the candidates in several key States.

Early and highly accurate prediction of the election outcome was only part of the story. The computers also provided data which went far toward explaining the why's of the election results. Before midnight the network commentators offered computer-derived estimates of the group basis of each candidates' strength, in comparison with the 1956 Eisenhower-Stevenson contest.

Press commentary about the triumph of the computers on election night has glossed over the important part played by behavioral scientists, however. The computers could not have predicted the outcome from early returns without adequate programming. And this, in turn, meant that behavioral scientists had to develop accurate statistical models of the voting public. The fact that three different computers were enabled to give such reliable projections (UNIVAC was only slightly less impressive than the 7090 and the 501) effectively demonstrated how powerful these models are, and how far voting behavior analysis has progressed. Unfortunately, the television networks did not fully exploit the model-builders in interpreting machine output. The commentators' observations on group voting, for example, was meager and superficial compared with the commentary that behavioral scientists could have provided.

The capacity of computers to project early returns accurately, while voting is still under

way in much of the country, inevitably raises this question: do these computer-based predictions have any effect on the behavior of potential voters in areas where the polls are still open? Governor Hatfield of Oregon apparently believed so, for he asked, in vain, that the networks make no computer-based forecasts until all polls had closed. In fact, several million votes had been counted and posted on network tally boards even before reliable computer forecasts were available, and early popular vote totals may have had just as much or as little bandwagon impact as the machines.

Perhaps the most intriguing matter for speculation is the role that computers will play in future election analysis. I think that little change in their election-night role can be expected. Only modestly greater speed in making reliable predictions is likely; the bottleneck is not the computers themselves, but the difficulty in obtaining and transmitting early returns. Projections may be slightly more accurate as statistical models of the voting public are further refined. A more far-reaching change may be in pre-election projections. Computer projections based upon comparisons of voting intention with past electoral behavior in selected areas would probably not yield more reliable forecasts than do polls using national probability samples. However, the projections could tell us a good deal more about probable group voting behavior than even quite large national samples can do.

The most fruitful prospect for using computers in voting behavior analysis does not seem to be projection at all, however. Rather, as the authors of *The American Voter* have shown so admirably, computers make their most valuable contribution by facilitating factor, component, and multiple correlation analyses, and by handling other complex problems in data reduction. Thus, better analysis will lead to increased understanding and thence to more accurate models.

How the Polls Fared in 1960

by ANGUS CAMPBELL

In a note to the editor of ABS, the director of the University of Michigan's Survey Research Center remarks on some of the successes and the few failures of the 1960 polls, in comparison with previous years' experience; he suggests that some of the pollsters still have some fences to mend.

As of mid-November a few votes still remained to be counted, and the case of California suggested that some surprises might still be in the offing. Whatever the final count, however, it is apparent that the national polls scored a near bull's-eye. The fact that one of them was "right" and another "wrong" is only incidental: the important thing is that they both caught the essential fact that it was going to be a very close decision. In light of the vagaries of turnout, misstatements of intentions, last-minute switches, and various other potential sources of error, it is doubtful indeed that we will soon see a better performance.

The uncertainty and closeness of the 1960 election invites comparison to 1948. It would appear that the pollsters learned well from their bitter experience in that year. While they still tend to treat their methods as trade secrets, one of them at least, George Gallup, has provided a sufficiently detailed statement of his sampling and interviewing procedures to make clear the substantial improvements which have been made in his polling techniques in the last twelve years. One cannot say that the methods of 1948 would not have called the turn in 1960, nor can anyone guarantee that the pollsters now have their errors cut down to the range of one percentage point they achieved this November. But the reduction in dependence on personal judgment, especially in sampling procedures, that has taken place between 1948 and 1960 is reassuring. The hazards of predicting the vote have certainly not been eliminated, but they have been reduced.

The controversy which appeared in the *New Yorker* magazine and in the press over the adjustments applied by the polling agencies to their raw data added a minor excite-

ment to the campaign and may even have contributed to the general enlightenment regarding poll-taking. This is a feature of the polling operation that has always been rather mysterious, and in the bad old days before 1948 there were some aspects of it that could not have stood the light of public scrutiny. Happily, Dr. Gallup is now apparently prepared to tell all, and what he has to tell seems in no way unorthodox or discreditable. Mr. Alsop's *New Yorker* article had something of the flavor of an exposure, but in point of fact there seem to have been very little to expose. The only question this controversy raised in my mind is whether the public is not ready for a little more detail than the newspaper reports of the polls typically give it. I would like to see the Gallup Poll take itself a little more seriously and begin to regard its news releases as something more than journalistic entertainment.

Perhaps the most remarkable feature of the polls in 1960 was their extensive use on a private basis by the candidates and the parties. As in so many other areas of social and economic analysis, we are apparently seeing the displacement of the "old pro" by a new professional class. We may be sure that political folk-lore and finger-in-the-wind forecasts will die hard, but the extensive employment of the polling agencies by both parties would appear to presage an increasing interest in statistical analysis, of both sample survey data and election statistics. Unfortunately, we will probably never get a full report of the private polls; we are considerably more likely to hear of their successes than their failures. One hesitates to contemplate the liberties which must have been taken with the refinements of careful

survey procedure in the rush and confusion of the campaign.

As we compare the election just past with the others since 1936 which the polls have covered, we see that it is the first in which the division of the popular vote of the major parties stood less than two percentage points away from an even balance. In five of the six elections, 1936 to 1956, the discrepancy was at least four points. In other words, the polls went through their period of early development at a time of rather sizeable electoral margins. Even though their errors were sometimes substantial, they still managed (with the notable exception of 1948) to pick the winners. What would the fate of the polls have been if they had arrived on the scene in a period such as 1876 to 1892, when one election after another was decided by a majority of a few thousand votes? As Dr. Gallup contemplates his good fortune in coming through the 1960 election unscathed, he may well congratulate himself

on having chosen to launch his enterprise in the particular period of history he did. He could have done much worse.

No one can doubt that the polls greatly enhanced their reputation in the election just past. Perhaps the enhancement is not entirely deserved. Just as the polls were not as bad as they looked in 1948, they are probably not as good as they look in 1960. Nevertheless, deserved or not, their very good record in 1960 strengthens their claim to accuracy and increases the willingness of politicians and laymen alike to take them seriously. This in turn will intensify the misgivings in some people's minds as to the influence the polls have in the functioning of our electoral system. I predict that we will hear more discussion of the iniquities of the polls in the next four years than we have ever heard before. It is not an altogether frivolous question and it deserves a more reasoned answer than the pollsters have generally given it up to now.

CONCERNING PHILOSOPHERS

There is little doubt that the common man of our time is not entirely beyond reproach for his lack of interest in philosophy; he has grown too much into the habit of thinking that he can dispense with thinking. For the lack of philosophic communication, however, I prefer to blame philosophers. . . ; it is their business not only to think but also to find the best possible ways to make their thinking communicable. Now it seems to me that they often fail in this respect because they move along one of the two following blind alleys: either they pay exclusive attention to questions of philosophic procedure and make philosophy esoteric, or they pay their respects only to the most general questions and hence often turn philosophy into something nonphilosophical. Or to put it otherwise: when philosophers get seriously into philosophic business, they tend to deal with unimportant issues, whereas when they deal with important issues they tend to become little philosophical. As a consequence, philosophy has become in some quarters a highly sophisticated exercise feeding upon itself, and in some other quarters a series of slogans for ideological warfare.

JOSE FERRATER MORA

Philosophy Today (New York: Columbia University Press), 1960

Communications Research and the Social Sciences

by ROY E. CARTER, JR.

The interests of the communications researcher often bring him onto common ground with other social scientists. The long-range, cumulative effects of the mass media are of common concern, as is the study of the communicator himself. Communications research has some familiar problems of method, and also some techniques such as content analysis that could be redirected to provide a new way for studying social and selective aspects of perception. Multidisciplinary team research may not live up to its billings, but interdisciplinary appreciation is always worth seeking. The author is Director of the Research Division of the University of Minnesota's School of Journalism; this article is based on a talk he gave at the University of Oregon in March 1960.

THE PERSUASIVENESS OF MASS COMMUNICATION AND THE PERSUASABILITY OF PEOPLE

The history of communication research has included a kind of dialectic in which the notion that the mass media greatly affect people has waxed, waned, and then grown again. Surely it is true, for example, that the students of propaganda who flourished in the decades following World War I were too swept up by the enormity of what they saw. Communication and transportation facilities far more extensive than those employed in any previous conflict had been used to produce and disseminate a great deal of domestic and international propaganda, and chest-beating commentators even wrote books afterward in which they claimed they had won the war itself (or parts of it) with words. Books were written describing the tricks and schemes the propagandists of the war and post-war period had used; an Institute was organized to provide instruction in how *not* to be misled by the forerunners of the "hidden persuaders" who later worried Vance Packard; and, of course, the rather amorphous collection of research procedures we call content analysis was invented so that we could sensibly classify and describe what the propagandist did.

Such industrious activity by people who made sweeping inferences about propaganda effects merely from the fact that propaganda was to be found, could not help but bring a raised eyebrow here and there from social

scientists who were not quite so sure that propaganda, however clever, always worked. Still, the same period brought a good deal of effort on the part of pioneer workers in the field of opinion research, and it turned out that you could certainly change the answers sophomores gave to opinion questions if you exposed them to persuasive messages. And the pendulum did not really swing back until people such as Paul Lazarsfeld, Bernard Berelson, and Elihu Katz began to show that many messages which went out through radio or in the press did not seem to have very impressive effects when you permitted normal patterns of selective exposure. Moreover, the evidence indicated that what effects were produced might well be due in large part to reinforcement through face-to-face contact. And lastly, there were one or two dramatic and convincing pieces of proof—like the failure of Cincinnati's all-out campaign to teach people about the United Nations—that a very heavy flow of well-designed communication might not "do much" if the subject-matter just wasn't salient in terms of the interests of the audience.

Still, we ought to be cautious in accepting the two-step flow hypothesis (the idea that the media have most of their effects through opinion leaders at the peer group level.) We should not blindly regard this hypothesis as covering any and all situations—at least not until we know more about how operative the principle is, and under what circum-

stances. Furthermore, I feel sure that the mere demonstration that the short-run effects of the mass media are limited should not obscure the fact that the media undoubtedly have long-range, cumulative effects of which we are only dimly aware—and that sometimes these may be effects which are not really intended by anyone. They are just the end product of the five hours a day or more of exposure which many persons experience. Take, for example, some research findings by a student of mine which suggest that our images of different occupational groups may very possibly be affected substantially by what we see on television.

Many researchers have expressed interest in the ways in which reference groups influence what we select from the mass media, and how we perceive and interpret what we do select. Relatively little attention has been given, however, to the extent to which, for some members of our society, reference groups are created by the media. There is a 12-year-old girl down the block from me who lives in a strange, autistic dream world populated not by the Hollywood movie colony itself, but by the stylized, fictitious folk who make up the movie colony as it is portrayed in the movie magazines. These people, whose behaviors, attitudes, and values have an apparent consistency, seem to constitute the real world of reference for this child—they are her "significant others."

Now, I happen to believe, with my former mentor LaPiere, that the primary group is still important, and I do not think we live in a society of strangers in which there is practically no common denominator of experience except that provided by the mass media of communication. Still, the amount of shared experience is great indeed, and in my own work I have begun to worry about what I call the agenda-setting function of the mass media—the extent to which the actual content of communication within the primary group is structured and furnished by what is read, seen, or heard on television or radio or in newspapers and magazines. The common denominator of experience is, surely, broadened and extended by re-telling. I do not believe you can study child development

today, or the socialization of the individual, without looking at the mass media and their possible long-term effects. We occasionally see an encouraging breakthrough in a study like that conducted in England by Himmelweit and others—an exceedingly thorough investigation of the effects of television upon school children in selected communities.

In connection with this matter of long-range or cumulative effects of the mass media, I should call attention to the fact that among many of us there is a strange ambivalence with respect to the media—we question their ability to do good, yet are sure they do harm. Thus the student of intergroup relations may say in one breath that the newspaper and television cannot do anything to improve intergroup understanding, yet in the next breath argue that these same media do an effective job of hammering in stereotypes of minority groups. (Tumin, you may recall, found some evidence which suggests that exposure to the media may have some salutary effects.) Or again, some of my medical friends doubt that the media can be of much use in the field of health education, even though they are sure a great deal of damage is done through premature publicity for new drugs. This kind of ambivalence reflects the seriousness of the gaps in our knowledge about long-range media effects.

In any event, I would make a plea for long-range studies at the community level in which a serious effort is made to trace the effects of the media through time, both in urban and semi-urban centers and in our growing suburban areas. It was recently suggested that such study should look at the functions of interpersonal and mass media communication as instruments of innovation and change. I think we also should examine the contributions of the media to the status quo.

THE MASS COMMUNICATOR AND THE COMMUNITY

So far we have made only a few scratchings into the whole question of the study of the mass communicator himself, particularly in terms of his relations with other persons and groups within and outside the com-

munications enterprise. There have been a few personnel studies in the mass media field, and in my work I have used some notions from role theory and the sociology of occupations in studying relations between editors and reporters, and also between such news-source groups as public school superintendents and medical men. In general, however, we know far less about the mass communicator than about his audiences, partly because the publishers and broadcasters who have underwritten work in communications were primarily concerned with their audiences, not with the people like themselves who were trying to inform, entertain, or persuade.

Still, some of us think such scrutiny is important and necessary. Many of our studies of media content are less effective because, although we say that we study only *manifest* content (and concede that it is really difficult and dangerous to draw inferences about intent from what goes out in the media), our curiosities lie deeper. We would like to know, for example, how the newspaper publisher figures in community power structures, and how this affects his decisions and those of others. Or, what are the channels of control and influence within the newspaper organization itself? What are the actual or imagined pressures on the reporter, within and without the newspaper organization? What are his values, and how does he adjust his behaviors in the light of those values? More particularly, how does he make the critical decisions within the framework of his job—the decision to ask, or not to ask, to write or not to write, to resist pressures or to give in to them? How does the mass communicator perceive his audiences, and to what extent does he behave in terms of unrealistic or oversimplified stereotypes of audience interests or employer expectations? Or again, how much empathy does he have?

Actually, I am referring to issues that have counterparts in many problems already being studied in other fields—the sociology of the medical professions, for example, and the study of morale and other human relations factors in the industrial plant. The study of the journalistic communicator is especially appropriate, however, because he determines

so much of what other people experience of the world. Furthermore, if we study his decisions we have to study them in combination with the decisions made by others in the community. For example, the editor's decision to give favorable and prominent attention to a school board decision involving high school graduation requirements in our sputnik-conscious era was preceded, perhaps, by a school administrator's decision that this particular way of carrying the message to certain publics in the community had certain advantages—advantages which may have outweighed certain disadvantages. And if we look more fully at the general range of administrative decisions made by the school administrator, for example, we probably will find that a surprisingly large proportion of them are related to what could be called communicative acts.

A friend of mine at a large midwestern university has charted for himself what may turn out to be years of study of the relations among the three members of what he calls the reporter-editor-news source triad. He is structuring his experiments, beginning in a laboratory setting, around some of theories of Theodore Caplow and others concerning such elemental social structures. I applaud his efforts, but I also hope that he will try to identify some of the effects of non-present reference groups upon what the reporter, editor, and news source do. The medical news source, for example, is much restrained by the intra-professional controls imposed by his medical colleagues.

In any event, if we are to study the mass communicator intelligently, we probably should do so in the community setting in which he works and lives. In short, I am not excited by the proposal of a graduate student who wants to send a mail questionnaire to 800 editors in 19 States, but I have some enthusiasm for another young man who wants to take a hard look at relations between local government officials and the press in six small Minnesota cities.

RESEARCH PROBLEMS, COMMON AND UNCOMMON

Those of us in communication research encounter methodological challenges too,

which have implications for scholars working on a variety of problems. Take, for example, the matter of the controlled experiment in communication and the problem of coordinating the laboratory experiment with the field survey. There is a standard roster of criticisms concerning the communications experiment itself. In their most painful form, these criticisms consist of the charge that we almost always work with captive audiences who are not like the people we would really like to reach with our messages, anyway. Moreover, say the critics, the captives are forced to expose themselves to content they ordinarily might not read or listen to, and furthermore they are required (or at least encouraged) to maintain a constant and fairly high attention level quite unlike that of the reader or viewer or listener who, in a more naturalistic setting, feels free to lay aside the paper, twirl the TV dial, or shut the door.

Moreover, we rarely reproduce in the setting of the communication experiment the kinds of channel noise (my apologies to Shannon, Weaver, and George Miller) which typically accompany our exposure to the mass media. I defy you to produce in the laboratory anything to correspond with what I have to put up with when I read my evening newspaper: the TV set blares and flashes away, my wife yells messages from the kitchen, and a pair of youngsters aged four and three ask interminable questions and play tag around and behind my chair.

Not only, then, do we have non-typical audiences attending in non-typical ways to communication material. In addition, we have impeded the normal processes of self-selection whereby people choose to read, see, or hear that which jibes with their pre-existing interests, opinions, or both. (The opinion aspect of self-selection is, of course, fairly important in the case of experiments with propaganda materials.)

We can deal intelligently with these difficulties, however, through the integrated use of experiments and field studies and, where possible, the split-run type of field experiment in which comparable groups of persons, in a natural setting, receive different versions of the same message.

There are other problems, however, more telling than those I have mentioned. One is the whole question of how much we can generalize from communication experiments, whether they are conducted in laboratory or in field. Can we, in short, learn to abstract the essential elements of situations? Can we be sure that our variables are what we think them to be?

The researcher who uses "level of illumination" as an independent or predictor variable in a communication experiment can do a fairly efficient job of varying the amount of light without varying anything else. But when he decides to vary the "one-sidedness" of a message, or the "strength" of a fear appeal in a propaganda leaflet, the circumstances are quite different. He varies or manipulates these factors (or thinks he does) by manipulating language, with all its nuances and subtle shades of connotation. The fear level may be manipulated along with other factors. Or again, for that matter, the researcher may vary the prestige level of the alleged source of the message, but the relative success of the message from the distinguished source may really be due to the unintended but favorable effects of unrelated words the experimenter happened to use in *identifying* the source. I have had enough experience in pretesting propaganda materials and, for that matter, questionnaire items, to know that a single irritant particle can grossly affect the outcome of a message. Increasing concern with this problem is apparent in replication with variation, and the accumulation of data from many replications before findings are proclaimed in the journals.

I have suggested some difficulties that arise in communication experiments from such matters as the nature of samples (the captive audience problem) and the more general problem of the possible impurity of variables which the experimenter manipulates. These are problems, of course, which are to some extent common to all experimentation in the social sciences, but I believe that their severity is sometimes more apparent in communication research than in other fields and that this has led to intensified efforts toward resolving such prob-

lems. I realize, certainly, that these difficulties are not unique; the social psychologist who conducts small group experiments in which he attempts to manipulate or control variables that represent relatively abstract concepts has similar worries. He may think he is manipulating the "homogeneity" of the group, for instance, and actually be manipulating other variables as well.

A third kind of difficulty arises from the remarkable opportunities the communication experiment affords for interaction (and an unhappy kind of interaction, at that) between the independent and dependent variables. This problem exists simply because we typically use communication stimuli as our independent variables, and then measure or assess response to the experience by exposing people to *additional communication*. Our dependent variables—the experimental outcomes in which we are interested—typically involve such matters as the amount of learning or retention of content, the direction and amount of opinion change, or the degree to which a message is believed or just plain liked or disliked. We find out about such matters by asking questions, but we may wonder whether we produced our results with the original message, with the questions we asked, or through some unique interaction of the communication *and* the questions. The interactive possibilities increase, of course, if we use a pretest of opinion or information (does the pretest lead to selective perception of the message when it comes along?), and we also increase the complexity of the problem if we do a panel-type follow-up on our subjects through time. These problems *can* be dealt with by proper experimental designs. All I am suggesting is that the communication experiment does help point up their seriousness—and thus may lead to more caution than we might otherwise exercise.

CONTENT ANALYSIS AND SELECTIVITY IN PERCEPTION

Content analysis provides us with another example of the way in which a problem in communication research may clearly be re-

lated to a problem of serious concern to many social scientists—the whole matter of selectivity in perception, and the effects of social factors upon what is perceived and how it is integrated into a person's cognitive structure.

In content analysis we have always been worried about the reliability of coding or classification. Our usual approach has been to train a group of coders who somehow come to view the world through eyeglasses of the same strength and hue. Yet in doing this, we have done violence, in a way, to what the term "reliability" has connoted in other fields. When a psychologist exposes people to verbal stimuli, he expects at least two sources of variation in the responses people make—a small amount of variation which is due to error of measurement (or unreliability), and a substantial amount of variation which is due to *individual differences*. In fact, we may say that in the social sciences generally, when we expose people to verbal material and then observe their responses, we are searching for individual differences. This is what I do when I ask an opinion question in a survey.

As a content analyst, on the other hand, I expose different people to the same verbal stimuli and hope and pray that they will somehow react in the same way. When they do not, I say the coding is unreliable.

Let me illustrate my point with a concrete example. I recently completed work on one of the most complex and elaborate studies ever made of American newspaper content. It includes major attention to newspaper treatment of the desegregation issue in the Southern States. In that study, I developed a very elaborate scheme for describing who got a hearing on the segregation issue in the public print, with what arguments and what proposals. But I decided at the outset that I was not going to fuss around with the conventional kind of analysis in which a coder has to decide, for example, whether a given statement is "favorable" or "unfavorable" to segregation. This was too subjective; coders could not do this sort of thing with sufficient reliability, particularly in a inter-university study. I realize now that I missed a remarkable opportunity to do something

important and worthwhile. I should have surrounded myself with as heterogeneous a batch of coders as I could find, I should have had them make *exactly* the kind of subjective judgments I tried to avoid, and then I should have put substantial time, energy, and money into finding out *why* a given news item strikes one person as being favorable to integration and another person as being unfavorable. Because this, after all, opens up one of the most fascinating problem areas we can deal with in the social sciences: what are the differential ways in which different people experience the "same" environment, including those aspects of the environment which we experience vicariously through the mass media?

INTERDISCIPLINARY RESEARCH

Some of the studies in which I have been engaged have involved interdisciplinary collaboration. What is the future of this mode of organizing research?

The essence of the problem is the achievement of interdisciplinary *appreciation*. On the time scale, at least, there seems to be a real pattern of diminishing returns as the number of participants in a study increases, and this problem generally is compounded if participants come from different departments of the university. In short, it is one thing to *appreciate* and *use* the contributions of scholars in related fields, and quite another to work with them in planning and conducting a study. In my view, however, it is usually worth the effort, *if* the time pressure is not too great. Vocabularies grow, people learn new methods and new philosophical approaches, and—if the problem is not too great and the time not too limited—the research field may produce a better than average yield per acre.

There is, however, a great deal still to be said for the arrangement whereby a problem is studied by the lone researcher or by a small team. Hopefully, the teams which do develop will come about simply because like-minded people with similar interests tend somehow to coalesce. We will not, in

short, very often experience the kind of project I have seen in which someone from on high simply *pronounces* that in this particular study we "ought to have a psychologist," "a sociologist," "an economist," and so on. This is, indeed, nonsense. And neither should there be *a priori* decisions whereby the sheer number of persons working on a project impedes the study itself. In the research center I direct at the University of Minnesota, I have serious concerns about the notion that too many cooks *will* somehow make a good broth into a mess of potage. Take the matter of question-design, in a study where it has already been decided that survey tools are to be used. I have seen situations in which a person with a remarkably creative, innovative, and exciting idea has been quashed by a wet blanket of criticism from someone who managed to hurt a study more by that move than he helped it by preventing an occasional blunder. And quite often, I suspect, I have been the person who did that damage.

One other comment about interdisciplinary understanding: some of us (and I must confess that I have been guilty) are remarkably inconsistent. For example, a psychologist who works in the field of individual differences or a sociologist who is concerned with intergroup relations may do a brilliant textbook or classroom job in that by-now-standard presentation which shows that differences within a group always seem to exceed differences between groups. And then, to our surprise, we discover that the scholar in question is almost as dogmatic about his own discipline as the Southern white supremacist is about the inborn superiority of Caucasians.

What I am saying is simply this: if a man working in a given social science field really takes a hard look at the people who are working on the same problems he deals with, he may very well find that there are many scholars in other disciplines who are closer to him in theoretical framework, methods, and even values than many of the men who bear the name of his own discipline but are concerned with what to him are remote issues and remote problems.

Topics and Critiques

NEANDERTHAL TODAY AND TOMORROW

In the corner of the world where Turkey, Iraq, and Iran converge, several 50,000-year-old skeletons of Neanderthals were recently discovered. Life was rough in those days: they had probably been killed by a rock fall from the roof of their cave; one had an old spear wound in his ribs; another was arthritic; another's arm had been amputated with a stone knife. It is good to know the past; it will help us adjust to the future. Published in October was Harrison Brown and James Real's *Community of Fear*, which says:

The Soviet Union has apparently, in the last few years, instituted a civilian defense program of substantial magnitude. It is probable that within the next two or three years the United States will embark on a crash shelter program for a large proportion of its citizens and some of its industry. Once the shelter program is underway, it will constitute a significant retreat from the idea of the obsolescence of war.

Once the people are convinced that they can survive the present state of the art of killing, a broad and significant new habit pattern will have been introduced and accepted, one grotesquely different from any we have known for thousands of years—that of adjusting ourselves to the idea of living in holes. From that time onward it will be simple to adjust ourselves to the idea of living in deeper holes.

Tens of thousands of years ago our Mousterian and Aurignacian ancestors lived in caves. The vast knowledge which we have accumulated during the intervening millennia will have brought us full cycle. The epic of man's journey upward into the light will have ended.

SOCIAL SCIENCE SYLLABI IN RUSSIA

The Soviets may find it easier than we to go back to the cave, since they seem to take more care to keep their people from straying from its mouth. President Harlan Hatcher of the University of Michigan has just published the syllabi of three courses required of every college student in the Soviet Union. They take up five years of study and from 8 per cent to 10 per cent of the college program. They include "The History of the Communist Party," "Political Economy," and "Historical and Dialectical Materialism." The Political Economy course gives 300 hours of Marx, Engels, Lenin, Stalin, anti-personality-cult Khrushchev, and Mao Tse-tung—and nobody else. The third course reads the same authors plus other Communist writers. Only in the supplementary reading list of the course on Communist Party history do any writers from outside the Iron Curtain make an appearance; these are William Foster of the U.S.A., Maurice Thorez of France, Palmiro Togliatti of Italy, Ville Pessi of Finland, John Gollan of England, and Johann Koplennig of Austria. To our knowledge there is no single college student in the Western world who is subjected to this fate of every Soviet student.

NEW SURVEY OF COLLEGE PLANS

The Survey Research Center reports from a sample survey that the proportion of college students among 18 to 21 year-old Americans has risen from 27 per cent to 37 per cent over the last ten years. Also, there is a progressive rise in intentions to send children to college; 73 per cent of the families of children aged one to nine expect them to attend college. The average annual expense of a student in college in the 1959-60 academic year was \$1,550, of which about \$950 came from parents, \$360 from student earnings, \$130 from scholarships, and \$110 from other sources.

THE SPREADING DISCUSSION OF CONFLICTS OF INTERESTS

Universities, business, and governments are all plagued by conflict-of-interest problems. Long before sociologists such as Simmel elaborated the concept of social role and Hyman ventured the similar idea of a man's "reference group," political debates were agitated over the question of whether a man could serve two masters. The U.S. Constitution forbade double office-holding, for example, and in 1853 a federal law on conflict-of-interests was passed, restricting federal employees from dealing with themselves (or their shadows) in private capacities.

A recent report by the New York City Bar Association urges laws to forbid gifts from "anyone whom the employee has reason to believe would not give the gift but for the employee's office or position with the Government," as well as from anyone doing business with the employee's agency. (Attorneys themselves have a difficult and age-old problem in respect to conflicts of interest, for they are sometimes found to be serving contrary parties or representing parties in matters in which they have a principal's as well as an agent's interest.) We wonder at what passes for the psychology of sanction and conformity among lawyers. How can one really expect to legislate in this area? During all of our lives we are tied up by conflicting interests. And we know very little of the ways of controlling them within ourselves, and much less of how to control them through a formal, external legal system.

The National Industrial Conference Board recently issued a study of the policies of 195 manufacturing companies toward their key employees carrying on outside business interests. One-third of the companies said they did not permit such activities at all (only one in ten had a *written* policy), whereas two-thirds permitted outside business interests. However, most companies thought they would prevent any key employee from owning a significant interest in a supplier or, in some instances, a customer company. The case of the Chrysler Corporation, where high officials were revealed to have extensive interests in such related companies, is fresh in the public mind. We also remember numerous exposures of the business interests of labor leaders, ranging from a shop steward's "take" on horse-betting in his factory area to a Teamster Union official's tire company that sold tires to trucks of companies depending upon union contracts to keep their trucks running.

Professor Quittmeyer last year undertook a survey of faculty consulting practices among members of the Academy of Management. According to data from 63 professors of 62 universities, 60 per cent of the universities concerned encouraged the practice of outside consultation; 25 per cent were neutral; and 15 per cent discouraged it. Needed income and more effective teaching are the chief justifications; competition with private firms (which charge from 50 to 100 per cent more) and conflict with teaching, research, and publication were reasons for discouraging consulting at some schools. Little mention was made of any loss of integrity or of objectivity. (A separate study might be made of the influence of textbook-writing upon integrity.) In most schools, only informal clearance with administrative authorities precedes consulting work, and often jobs are not cleared at all. The modal fee seems to be about \$100 a day, or \$25 per hour if an hourly rate. Most respondents approved their freedom to conduct their work independently of the university administration; some wished only that the university would do more to help them find work.

The more the problem of mixed-up interests in government, factory, and school is considered—and we cannot forget the "moonlighters" on the New York police force who are presently struggling with the police commissioner on the question—the more it appears that the problem goes far beyond any legalistic study or traditional, absolutistic, and pecuniary morality. Modern society is a maze of compartments and connections. Not only money, but every value—prestige, power, affection, and so on—is subject to increased chances of "split-loyalty." The moral complications that ensue should be subject to general analysis by many ethical philosophers and social scientists.

NEW OLYMPICS ARE NEEDED

On a cool day in early September, we watched many athletes of the world run, jump, lift, and swim in Rome. We laughed at some of the "games" in which men and women competed: the numerous kinds of weightlifting, the innumerable riding and wrestling events, the female shot-put. We saw the Communists' professional athletics masquerading as amateurs. We wondered at the exclusion of a number of Western and American sports, such as tennis, golf, baseball, bird-watching, angling, and auto-racing. We noted the British and French bemoaning their "loss of national vigor," and the "prestige" of the USSR mounting, as the Soviets, in sports as in "sputniks, played to the grandstands by heavy, unbalanced exertions. It seemed to us that our recourse should not be to withdraw from the games but to extend them by a thousand forms so that they can become truly representative of the richness and achievement of a country, or better yet, of individuals. Thus the Olympics should take in all worthwhile human action sequences that can be confined and judged as closely, say, as a boxing match. Some have already been developed, such as corn-husking, truck-maneuvering, musical composition, oratory, bull-dozing, seed-planting, and cookery. Many others could be devised, especially in those economic pursuits that are closely related to economic development. Why should not all the desperately poor countries be persuaded that a race behind a plow is as important as a race over cinders and wooden hurdles? These are the directions in which the Olympics should move, not into the muscular excesses of proletarianism or toward the decadent finesse of the ancient gentleman. Every part of life can be a game. This should be the true conception of the Olympics: let them represent all the facets of life, broadening the moral equivalents of war of which William James wrote.

THE PRESTIGE ISSUE: AN INSULT TO POLICY SCIENCE

The question whether American "prestige" has recently declined was hotly but superficially debated during the recent political campaign. The debate never dealt with the question of why such a paltry few dollars were budgeted for the research and analysis operations of the U.S. Information Agency, which reports on the American image and all other aspects of our psychological relations overseas. Still, many seemed anxious to rest the election of the President, American foreign policy, and national defense upon several inadequate reports drafted by that staff and purloined by partisans. Forty billion dollars are spent annually for defense and its hardware, and practically nothing to systematically appraise world opinion. Yet everyone scurries for cover when some riotous opinions are voiced in tropical Africa! The semantic confusion of the debate was compounded of many traditions, personalities, and institutions, in the fine old tradition of political campaigns, and total reform is scarcely imaginable. Certainly, however, the new administration might begin to give a solid basis to future official decision and public debate by multiplying ten-fold the USIA's budget. This would at least equal the cost of maintaining a single bomber in combat readiness.

A DISSENT

Professor Felix Oppenheim has entered a dissent to a recent comment in these pages:

For the first time since the start of *PROD*, I found an item with which I strongly disagree. I refer to "The French Garrison State?" on p. 15 of the November 1960 issue. How would the U.S. government have reacted against intellectuals inciting drafted to desertion during the Korean War? (This does not mean that I am not in sympathy with those French intellectuals who are doing just that in the present Algerian conflict.)

Communications Today and Tomorrow

by **FREDERICK R. KAPPEL**

Some recent remarks of Frederick R. Kappel, president of the American Telephone and Telegraph Company, may interest our readers. In these excerpts from a speech before the Boston Conference on Distribution on October 18, he describes high-speed machine-to-machine "talk" over the regular telephone network, satellite communications, and other developments in mass communication techniques whose socio-economic implications are yet to be discerned.

DATA TRANSMISSION AND DISTRIBUTION SYSTEMS

One phase of communication progress that I am certain will have great impact on marketing and distribution is the transmission of data. It is no news to marketing people that distribution systems have become very complicated. To broaden markets, company after company has spread out and decentralized its distribution centers. The channels from manufacturer to consumer are longer and more numerous. They carry a greater and greater variety of goods. Keeping the pipelines full takes a big share of total production. All this costs money—lots of it. Control is a difficult problem. There is a big need to streamline, to smooth out, to speed up. Progress here is just as important as progress in manufacturing methods.

To help solve the problem, many companies have started to use various kinds of data-processing machines. There are large machines and small ones, and assorted sizes in between. Let me describe a small one—a rather simple card-reading machine—to illustrate how innovations in communications can help.

Say you want to order certain items from a warehouse in Watertown, or Grand Rapids, or Seattle, or wherever—a dozen of this and a gross of that, and sixty-seven of something else. You have a file of punched cards, one for each item. You also have one of the card-reading machines, connected to a telephone through another device called a Data-Phone.

From the file you select the cards for the items you want. Then you dial the number of the receiving machine at the warehouse, and are connected through the regular tele-

phone network—just a plain telephone call, like any other. The receiving machine answers automatically and you feed your cards into the reader at your end of the line, keying in by pushbuttons the quantity of each item that you want. At the warehouse your order is instantly reproduced on punched cards there; these may be used not only to print the order forms, invoices, and so on, but also to update accounting and inventory records, and for billing purposes.

Now there is nothing new about card readers that reproduce records over a communication line. But until now they have needed private or leased lines. What is new here is the other device I mentioned: the Data-Phone. It is this that translates the language of the card reader and sends your order over the regular telephone network. And I emphasize—Data-Phone service is not limited to handling calls from this particular kind of machine. Data-Phones make it possible and practical for many types of business machines to "talk" over telephone lines. Today we can do this at medium speeds. In the future the speeds will be much, much faster. In fact, Data-Phone models now being developed will enable us to transmit information at a rate equal to about 3,000 words a minute. . . .

The Data-Phone technique is also being applied to teletypewriter services. By connecting teletypewriters to datasets, we can use them to communicate over the big country-wide network, whereas up to now they have been limited to a separate network, commonly known as TWX, or to private lines. A couple of years from now the separate TWX network will be a thing

of the past; messages will be switched through to their destinations over the big network. Also, service through the big network will begin to take the place of some of the complicated private line systems that many businesses now need. As an example of this, Delta Airlines next year will be the first large business to change over from a private line set-up.

Using the big network of course makes possible a wonderful flexibility—a company's communication system can be expanded or modified almost at will. Furthermore the service will be highly mechanized and extremely fast. To illustrate, each of Delta's offices in 60 or more cities will be able to connect with any other at an average speed of less than half a minute. When perforated tape from a teletypewriter is fed into the sending dataset, the machine "dials" the distant number automatically, confirms that it has reached the right number, sends the message, and automatically disconnects on completion.

There are many other aspects of machine-to-machine communications. But the two examples I have given help to suggest what is coming. With the whole telephone network available, and growing more versatile all the time, businesses will be able to combine data handling and communications in whatever ways best meet their particular needs. Looking specifically at the distribution problem, managements will be able to recentralize control. This we believe will provide one of the best tools for increasing distribution efficiency in the 1960's.

PERSON-TO-PERSON

When I speak of a network that is growing more and more versatile, I mean a nationwide system, a combination of lines and instruments and switching apparatus, that can be used for more purposes and also with ever-increasing convenience. Take dialing for instance. Today about 20 million telephone users in the United States can call across the nation by Direct Distance Dialing—DDD. A few years hence this will be almost universal. Today also in many cases an operator must ask you for the calling number. Within a few years, however, this will rarely

be necessary—on most calls the calling number will be recorded automatically.

Again, while dialing is easy enough for most people, we don't at all regard it as the last word. Not too long from now, if it is worth something to you to push buttons instead, you may do so. Incidentally, we already have a rather elegant name for this. We expect to call it "touch-tone signaling." The reason for the name is that when you press the buttons on your telephone, each one sends a distinctive tone over the line, and it is these tones that operate the switching equipment.

However, you may prefer a telephone that will dial numbers automatically. This you may certainly have, at considerable convenience to yourself, and, of course, a modest profit to us. And to refer once more to Data-Phone service, the time is not far off when business machines will be able to originate calls automatically as well as answer them automatically. This means, for example, that when a computer has information to send to a distant location, the computer may "lift the receiver," so to speak, by itself, tell its associated Data-Phone what number it wants, get a signal when the call has gone through, and then proceed to "talk" with the business machine at the distant end.

Another practical possibility is to query a distant computer in data language and get back spoken answers. You could ask the questions by pushing buttons according to codes the computer will recognize. The computer has a recorded vocabulary of numbers and phrases, and as it figures out the answer it selects the particular words that will go back to you over the line—market quotations, for instance, or how many widgets are currently in stock. The advantage is that you get your answer directly, instead of on punched cards that have to be translated by another machine.

We believe also that in the future many more people will want to communicate while they are on the move. Today some 17,000 cars and trucks and about 30,000 vessels have telephone service that connects them to the big network, and service for air travelers is on trial. But the major developments are

still to come. We aim to serve millions of "mobile" telephones, not thousands. Clearly, people engaged in marketing and distribution, who are on the move much of the time, would be among the first to benefit. To provide such service we badly need radio frequencies that we have not yet been able to obtain from the government. But given the frequencies we are certain we can do the job. Eventually it is altogether possible that you could carry a pocket radiotelephone enabling you to talk with anyone else, anywhere, any time. For example, a Boston wool merchant on his way to visit a customer might pause a moment to call Australia and check a few facts with an agent there who happened to be off on a camping trip. This, of course, provided merchants and others wanted such service—and we could probably suggest several good reasons why they ought to have it.

The question is often asked, "When will we have visual communication so that people can see each other when they telephone?"

I can't give the date, but I think this is surely coming. Many firms, of course, already use closed circuit television to introduce new products, launch marketing programs, and the like. Closed circuit TV is still a long way short of transmitting and switching two-way speech plus vision through the nationwide system, however. This is no easy matter. From the purely technical standpoint we could provide such service today, but the price tag would be too high for widespread use. Nevertheless the potential market is great and I am confident that technology will get the job done and the cost down to a salable level.

You can imagine the impact this will have on marketing and distribution. Call up your dealer and show him your shoes, your ships, or your sealing wax. Let him see how they look and how they work. Take his order on the spot. Or if you happen to be a retail merchant, I am sure you would be glad to show telephone shoppers the merchandise they want to see. Let me not overstate this. It may be a long time before the average housewife has a telephone she can see

through. But I wouldn't rule out the eventual possibility.

More immediately, so far as shopping is concerned, many department stores across the country now sell from 5 to 13 per cent of their volume by telephone. The average sales ticket is higher and selling costs are lower than for in-store selling. Merchandise goes direct from the warehouse to customer. . . .

Just a word more here about seeing while you telephone. One reason the cost is high is that a communication channel capable of handling vision has to be about one thousand times as wide, electrically, as a channel that handles only sound. If we are going to switch see-while-you-talk calls through a network, each channel we switch to has to be a wide channel. Therefore this sort of network would probably develop step by step, over a period of years, to meet the specific needs of various customers.

NEW CHANNELS AND NEW SYSTEMS

And I call attention to this: the wide channels needed to handle vision can also handle tremendous quantities of data. I keep referring to data, but this is deliberate, because data transmission looms so large in the future. Specifically, these wide pathways can handle communications to and from big all-purpose computers. Today, for instance, we have a channel that interconnects computer centers in different plants of a missile manufacturer; it will carry as much information in 45 seconds as will be found in a 50,000-word book. This is not a network. There is no switching. But it suggests the possibility of the development of a network, perhaps small at first, but capable of growing, that would interconnect different businesses with computer centers. This is speculative, but perhaps in some such way as this we shall start toward the creation of a big wide-channel communication system, over which we shall be able to switch pictures, whole rivers of data, or what have you, between any two persons who have compatible equipment.

Most of what I have said emphasizes the importance of communication research. Since 1920 the Bell System has spent more

than a billion dollars for research and technical development, and at the present rate we would spend more than that in the next ten years. I won't try to describe the work in detail, but there are two or three aspects that I think will have great influence.

Next month we are putting into operation, on an experimental basis, the first Electronic Central Office. This is an entirely new kind of switching system—an electronic computer, really—and one of the striking things about it is that it can be quickly and easily programmed to use computer language, to provide different services and conveniences to suit the individual customer. For instance, suppose you were planning to spend an evening at the home of a friend, but wanted to be sure not to miss an important call. Simply by dialing a code, you could instruct the central office to direct all incoming calls for your phone to your friend's phone instead. Another possibility is that to reach people you call frequently—across town or across the country—you wouldn't need to dial at all. Just push this or that button and the Electronic Central Office will do the rest.

Operating in millionths of a second (instead of thousandths of a second like present equipment), electronic switching systems will further increase the speed and flexibility of communication services. We are not going to have these new systems all at once. Their introduction will necessarily be gradual. But in the meantime we are finding new ways to make existing systems more useful and efficient. For large firms with private switchboards, one of today's most useful and economical improvements is what we call DID—Direct Inward Dialing. Calls from outside can be dialed straight through to each extension, and outward calls from each extension to distant points can be automatically recorded. This makes it unnecessary for calls to be handled by a switchboard attendant, except in cases where the person calling does not know the number he wants.

Along with switching improvements, research is bringing us better, more efficient pathways for transmission. Our newest system, which we are just beginning to install, has the potential capacity to handle nearly 11,000 conversations at a time. . . . Through

a very specially made hollow pipe, a "wave guide," so-called, we shall be able to send 200,000 telephone messages simultaneously, or a couple of hundred TV programs.

So we have more to come as well as much on hand. Looking at the public we serve, at industry, at communities across the land, we are keenly aware that communication needs are growing and changing, and we are determined to meet them. We have a strong feeling that in a few years' time data communication . . . will actually exceed, in sheer volume, the communication of speech. Even today the U.S. Post Office is preparing experiments for sending mail by facsimile over communication lines. In the future, it is quite possible that trade publications, news bulletins, and even newspapers will be widely circulated over electrical circuits. . . .

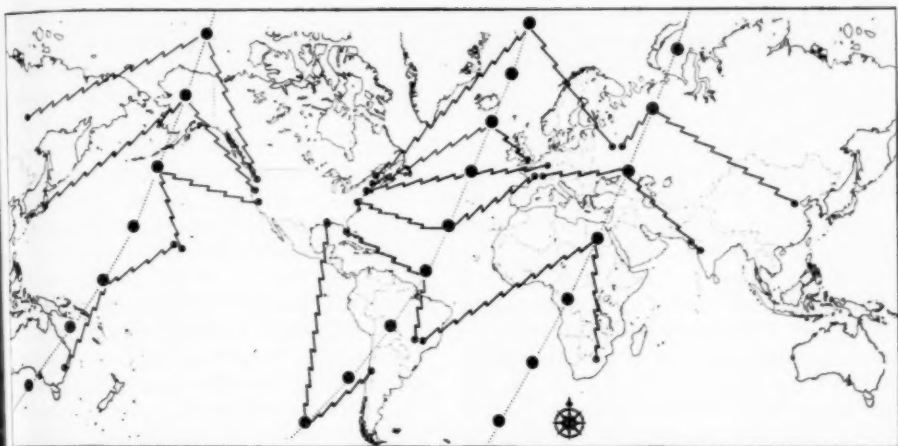
SATELLITE COMMUNICATIONS

The prime reason for the Bell System's interest in satellite communications is the impending need for thousands of circuits to provide overseas telephone service for the public. Today there are about 135 million telephones in the world, of which somewhat more than half are in the United States. Twenty years from now we expect there will be half a billion—perhaps 235 million in the United States, and the rest in other countries. Whereas this year we shall be handling something less than four million overseas calls, 20 years hence we think the number may be around 100 million—more than 25 times as many.

So we shall need more channels over the oceans—thousands of them. We believe satellite systems will help us to get them. We are planning new ocean cables too, and these will have much greater capacity than those already in use. But the practical possibilities of satellites appear to be very great, and so we have proposed a system that would use some 50 satellites providing channels between various points all over the globe. These would contain electronic amplifiers powered by the sun, so that signals received at each satellite from a transmitter on earth could be strengthened for their journey back to the ground. We have increasing confidence that such a system will

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Bell Telephone Laboratories

THE WORLDWIDE SATELLITE COMMUNICATION NETWORK PROPOSED BY THE BELL SYSTEM

not only provide high-quality talking channels, but will also make worldwide television a practical reality.

The Echo I satellite contains no amplifier. It merely offers a reflecting surface to bounce the radio signals back to earth. Nevertheless the basic idea is the same. The satellite is a relay point out in space. What it receives, it also sends back—either by reflection, or by retransmitting the signal.

The Echo I experiments were sponsored by the National Aeronautics and Space Administration, and our Bell Laboratories scientists in New Jersey worked in cooperation with members of the Jet Propulsion Laboratory in California. I can describe one or two important points. The first is that the transmitter and the receiver must both be able to "see" the satellite at the same time. Remember, it is a thousand miles up and traveling 16,000 miles an hour, so on each pass around the earth it can be reached by both ground stations for only a few minutes at a time. This is why, even with satellites in higher orbits, we would need many of them. With the 50-satellite system I mentioned, we would keep shifting from satellite to satellite as one goes away and another

comes along. To do this, we would need more than one transmitter and receiver at each ground station; we would need two of each, one set working on one satellite and the other set drawing a bead on the next one. And the transfer from Satellite A to Satellite B would have to be made so that a conversation between Boston and Bombay, for example, would not be interrupted even momentarily. Just keeping track of one satellite requires great accuracy. . . . Echo I is a hundred feet in diameter—ten stories high. However, at a thousand miles above the earth, that is about equal to a half-dollar at one mile. . . .

Satellite communication systems are still in the research stage, but we are pushing the research hard and also digging into the whole range of problems that must be dealt with to create a working worldwide system. At the same time we are going ahead with more cables—to Europe, to Caribbean points, to South America, to Japan, Australia, and other places across the Pacific. Cables and satellites will complement each other, we feel sure, in making possible the new order of global communications that we foresee in the next twenty years. . . .

"Systemic Adjustment": Economic Development *Plus*

by ABRAHAM M. HIRSCH

Economic development in less-developed areas is only one facet of a complex pattern of change that requires continued adjustment among the political, social, and economic sectors of life. The author suggests that the term systemic adjustment best represents the process. He is senior research associate with the Foreign Areas Studies Division of The American University.

Social scientists and policy-makers even today think of economic development largely in terms of creating new economic patterns in a society that is economically backward in relation to the advanced industrial states. Its purposes are viewed as quantitative and qualitative. They include increases in national production and in national income, as well as improvements in standards of living through the rationalization of production, of distribution, and of consumption.

Ways of thinking about the process have been circumscribed by the term economic development itself, which stresses the economic aspects of the process. Economists see the primary mechanics of the process in terms of capital formation and the sound use of this capital, in better utilization of natural and human resources. At first, political and other social scientists were not particularly involved in probing the dynamics which characterize nearly all of the states of Afro-Asia and Latin America today. Only in the last several years have political scientists, for example, seriously competed with economists in the study of the phenomenon of economic development. Two outstanding recent books suggest this trend: K. M. Panikkar's *The Afro-Asian States and Their Problems* (New York: John Day, 1959) and G. A. Almond and J. S. Coleman's *The Politics of the Developing Areas* (Princeton: Princeton University Press, 1960).

It has become more and more obvious that the process through which the under-developed (or less-developed, or emerging) countries are passing centers only in part on the economic phase of their national life. Economists are the first to admit that although their discipline can provide the theory for some of the changes that are in-

tended to be brought about, the prerequisites for such changes lie outside the framework of economics. The phrase economic development describes only that part of the process that is directly of concern to the economist.

The process can be considered in other ways. The term "emergence," as in "emerging states," strikes out beyond the realm of economics, but it too has limitations. It begs the question of the character of this emergence. It gives an implication of birth, of newness, which is unwarranted—some of the so-called emerging states are hardly newcomers to the political map of the world. Nor does "emergence" make clear from what stage to what stage these states are emerging.

A comprehensive examination of the process described by these phrases shows that it is one which calls for significant adjustments in the national life of the country concerned. One characteristic adjustment is the strengthening of the central government at the expense of centrifugal elements in the political society, elements such as tribal groups, semi-political sects, regional chiefs, nomadic peoples, or ethnic minorities. Another adjustment is the radical improvement of communications and transportation, so that goods, funds, persons, messages, and instructions can move from one part of the country to another at a speed previously both unknown and unnecessary. The process requires the reorganization of government to cope with vastly expanded activities. It requires the formulation of a national ethos, which allows the rationalization of the central government's new powers and responsibilities. It demands adjustments in national culture, and often implies that the language and cultural patterns of one group be im-

posed upon all other groups in the country, so that the language and culture of the dominant group become the language and culture of the nation. Internationally, the process invariably involves significant changes in the relationships between the nation in question and contiguous and more distant states.

The *complexity* of the adjustment process is its most striking characteristic. The timing of the adjustments made, and the interplay among them, must be handled in such a way that they will mutually support each other. As institutions are adjusted, they must be redesigned to conform to an overall pattern in which the desired goals of national existence can be achieved—goals such as political stability (domestic) and political power (external), internal cohesion and increased military potential, economic prosperity for the nation and economic well-being for the individual.

Implicitly or explicitly, changes and adjustments are designed to create a political, social, and economic system which will not only be viable but also suited to national purposes and expectations. The actual patterns of the system are usually borrowed from other countries, whose systems are seen to be not only compatible with the national

expectations of the national future but also, in one way or another, suited for borrowing and transplantation. One motivation of the adjustment process, a motivation based on operational as well as idealistic grounds, is to restructure national institutions in such a way that their interaction with institutions of the more advanced countries is possible, if not harmonious.

When economic development is seen in this light, it is one aspect of a broader process that might best be called *systemic adjustment*. The term has two general implications. It stresses the systematics of the process as well as the systemic character of the results that national leaders seek to achieve through the process. And it stresses the fact that the principal steps involved in the process require the adjustment of existing patterns and institutions—their overhaul, their alteration, their growth, or their reduction—rather than the creation and imposition of a wholly new set of institutional practices and structures.

Since the ways men think are influenced by the terminology they use, scholars and those who make policy might well, by using a new phrase, interpret economic development more consistently and properly as a phase of a general systemic adjustment.

"To stop short in any research that bids fair to widen the gates of knowledge, to recoil from fear of difficulty or adverse criticism, is to bring reproach on science. There is nothing for the investigator to do but to go straight on, 'to explore up and down, inch by inch, with the taper of his reason'; to follow the light wherever it may lead, even should it at times resemble a will-o'-the-wisp."

SIR WILLIAM CROOKES, 1898

Using Simple Calculations to Predict Judicial Decisions

by STUART NAGEL

Successful prediction of judicial decisions is inherent in a true "rule of law." It is also a dream of many a law student and a nightmare to the culture complex of legal and juridical professions. The author, of the Pennsylvania State University Department of Political Science, takes us step by step through a hypothetical set of cases. Using well-known arithmetical and algebraic operations, he follows key variables from prior cases to determine the likelihood of judgment for a litigant in a new case.

Justice Holmes believed that a major object of legal analysis should be the prediction of what courts will do when faced with given situations. A major object of all social science analysis might also be the prediction of what individuals or groups being studied will do when faced with given situations. Past events are especially valuable in making such predictions. Sometimes, however, if they are handled merely in an impressionistic manner, past events are too complex to serve as a basis for accurate prediction. Then a quantitative technique supplemented by non-quantitative considerations may be in order.

Most litigation situations revolve around legislative or judicial rules of law, which specify that certain individual variables or combinations of variables will lead to certain judicial decisions. The predictive method presented here applies mainly to litigation situations involving rules of law which do not specify exactly which combinations of variables will lead to one result and which to the opposite result. For example, in deciding whether there is a violation of due process in obtaining a criminal confession, the U.S. Supreme Court has never specified the combinations of variables that would lead it to the decision that a confession was inadmissible.

It is possible to predict how the court will go in a future case, however, from a quantitative analysis of both the variables present in past cases and the decisions reached. This is possible *provided* the court is consistent with the underlying pattern it has established (or which has been established for it, if a lower court's decision is

being predicted), and *provided* that the presence of the relevant fact-variables in the future case is not so subject to dispute that one cannot know what fact-variables will be found present by the court. These are some variables which the Supreme Court has found relevant in deciding some criminal confession cases in favor of the defense: the fact that the defendant has been detained for more than 12 hours incommunicado, during which time he confessed; the fact that the defendant is a Negro in a southern jurisdiction; and the fact that the defendant has been subjected to protracted questioning.

To illustrate the predictive method proposed here, five hypothetical past criminal confession cases (A, B, C, D, and E) involving four hypothetical variables (p , q , r , and s) will be used to predict one hypothetical future case, case X. In actual applications, more past cases and more variables are likely to be involved. (Fred Kort's provocative work greatly helped to generate the ideas presented here, especially his articles "Predicting Supreme Court Decisions Mathematically: A Quantitative Analysis of the 'Right to Counsel' Cases," in the March 1957 *American Political Science Review*, and "The Quantitative Content Analysis of Judicial Opinions," in the March 1960 *PROD*. Both methods described in Kort's articles, however, are far more complicated than the method described here.)

STEP 1: Compile a list of the cases in the jurisdiction involved, dealing with the issue involved. Only use cases in which one can determine what variables were present that

Example of Step 3

Cases (in time sequence)	Who Won on the Issue	p	q	r	s
A	Prosecution		Present		
B	Defense	Present	Present	Present	Present
C	Prosecution	Present	Present		
D	Defense	Present		Present	
E	Defense	Present		Present	Present

the court considered relevant. This usually means confining oneself to cases with published opinions as sources for predictive material. For purposes of our example we assume that five criminal confession cases are located—A, B, C, D, and E.

STEP 2: Compile a list of the separate variables present in the Step 1 cases which the court probably considered relevant to a decision in favor of the affirmative position. These pro-defense variables, present in one or more cases, we shall call p , q , r , and s .

STEP 3: Prepare a chart showing what variables were present (to the degree specified in defining the variables) in the cases,

and who won on the issue being predicted. In case X, the case to be predicted, variables q , r , and s are present. None of the past cases alone indicates how case X will go. In case E, the defense won with p , r , and s , but is q in case F equivalent to p ? In case D, the defense won with p and r , but are q and s in case X equivalent to p ? These questions can be answered only by some method which quantitatively or subjectively gives weights to the variables.

STEP 4: Prepare as many four-cell tables as there are variables. Each four-cell table shows the correlation between the presence of the variable involved and the victory of the affirmative position.

Example of Step 4

	Prosecution Wins	Defense Wins
Variable Present p	Cell a 1	Cell b 3
Variable Absent p	Cell c 1	Cell d 0

	Prosecution Wins	Defense Wins
Variable Present q	a 2	b 1
Variable Absent q	c 0	d 2

	Prosecution Wins	Defense Wins
Variable Present r	a 0	b 3
Variable Absent r	c 2	d 0

	Prosecution Wins	Defense Wins
Variable Present s	a 0	b 2
Variable Absent s	c 2	d 1

STEP 5: Calculate a two-place correlation coefficient for each four cell table where the correlation coefficient =

$$\frac{bc - ad}{\sqrt{(a+b)(c+d)(a+c)(b+d)}}$$

A correlation coefficient indicates the direction and intensity of the correlation between the presence of the variable and a victory for the affirmative position. Square roots can be determined by consulting a square root table, and the arithmetic operations can easily be done with a desk calculator or by hand if necessary.

Example of Step 5

Table	Correlation Coefficient
p	$\frac{3 - 0}{\sqrt{4 \cdot 1 \cdot 2 \cdot 3}} = + .61$
q	$\frac{0 - 4}{\sqrt{3 \cdot 2 \cdot 2 \cdot 3}} = - .67$
r	$\frac{6 - 0}{\sqrt{3 \cdot 2 \cdot 2 \cdot 3}} = + 1.00$
s	$\frac{4 - 0}{\sqrt{2 \cdot 3 \cdot 2 \cdot 3}} = + .67$

For greater precision, the correlation coefficient for each variable can be calculated while the influence of the other variables is eliminated through the technique of partial correlation (see J. P. Guilford, *Elementary Statistics in Psychology and Education*, pp. 316-18). For still greater precision, winning and losing in multi-judge decisions can be measured on a continuum in terms of the probability of obtaining the voting split of each case purely by chance. The lower the chance probability of the split, the greater is the victory, if it occurred, or the greater the loss, if a loss occurred (see *ibid.*, pp. 237-38). Precision is also gained by measuring the presence of the variables along a continuum, rather than as a dichotomy, whenever the variables are of such nature that it is possible to do so. This may necessitate a more complex correlation coefficient, however (see *ibid.*, pp. 297-305, 135-51).

Example of Step 6

Variable	Point Value
p	$100 + (100 \cdot .61) = 161$
q	$100 + (100 \cdot -.67) = 33$
r	$100 + (100 \cdot 1.00) = 200$
s	$100 + (100 \cdot .67) = 167$

STEP 6: Calculate a point value for each variable where the point value equals 100 + (100 times the correlation coefficient of the variable). This step is designed to eliminate decimal points and negative numbers.

STEP 7: Calculate a composite value for each case where the composite value equals the sum of the point values of the component variables of each case.

Example of Step 7

Past Case	Composite Value
A	33 = 33
B	$161 + 33 + 200 + 167 = 561$
C	$161 + 33 = 194$
D	$161 + 200 = 361$
E	$161 + 200 + 167 = 528$

STEP 8: Arrange the cases in order of their composite values and note the lowest composite value corresponding to a victory for the affirmative position and the highest composite value corresponding to a victory for the negative position.

Example of Step 8

Past Case	Composite Value	Who Won on the Issue
B	561	Defense
E	528	Defense
D	361	Defense ← cut-off points
C	194	Prosecution ←
A	33	Prosecution

Example of Step 9

Future Case	Variables Present	Composite Value	Predicted Winner on the Issue
X	q, r, & s	$33 + 200 + 167 = 400$	Defense

A composite value of 361 or higher indicates the defense will win.

A composite value of 194 or lower indicates the prosecution will win.

STEP 9: Apply the point allocations of step 6 to the variables present in the case being predicted.

STEP 10: Each time a new case is decided, insert its contents and decision into steps 1 through 8 in order to arrive at point values for new variables, to arrive at new point values for old variables, and to determine new cut-off points. This new material in turn should be used for the prediction of future cases.

Example of Step 10

If Defense Wins Case X		If Prosecution Wins Case X	
Variable	New Point Value	Variable	New Point Value
p	152	p	171
q	50	q	29
r	200	r	171
s	171	s	133
No new variable		No new variable	
New cut-off points: 325 and 175		New cut-off points: 342 and 333	

Second, if certain variables in a prior case led to an affirmative decision and the case being predicted has the same variables and more, the new case should also have an affirmative decision. Third, if a negative decision was given in a prior case with certain variables and the present case lacks any of these variables and has no others, the present case should also have a negative decision. Fourth, if a prior case explicitly says that the presence of a certain variable or a certain combination of variables will result in a decision for the defendant, such a rule should generally be followed in making predictions regardless of the point values of the variables. Finally, if the composite value of the case being predicted falls between the cut-off points, or if no cut-off points have been established because all the cases have gone one way or because there have been no cases, or if the case being predicted contains a new variable not encountered by prior cases, then one may have to resort to purely subjective weighting in making a prediction, provided none of the other four situations apply.

The simple arithmetical and verbal rules presented can easily be programmed into a small electronic computer for many types of cases. The computer can bring up to date the point values of the variables upon being told, *via* punched cards, the decisions and the variables present in new cases. Likewise it can do the predicting and punch out the result upon being told, *via* a punched card, the variables present in the case to be predicted. The American Bar Association has already established a Committee on Electronic Data Retrieval which has as one of its interests the investigation of such predictive systems.

The method presented here is in no way meant to replace the traditional methods

There are five types of situations in which the quantitative method should not be used. First, if a prior case has the same variables as the case being predicted, and no other variables, one should generally predict the same decision that was given in the prior case regardless of the quantitative analysis.

used to analyze judicial precedents. The method presupposes that legal scholars and social scientists will continue to point out the cases and the variables that are relevant to deciding particular issues in particular jurisdictions. If, however, the prediction problem involves allocating weights to the variables,

and the court or the legislature has not done so, then a quantitative method of analysis such as the one presented here may prove to be more accurate (and much faster if electronic equipment is used) than a purely subjective method of weighting factual variables in past precedents.

SOCIAL THOUGHT AND BELIEF AS EXPERIMENTAL

When we say that thinking and beliefs should be experimental, not absolutistic, we have in mind a certain logic of method, not, primarily, the carrying on of experimentation like that of laboratories. Such a logic involves the following factors: First, that those concepts, general principles, theories and dialectical developments which are indispensable to any systematic knowledge be shaped and tested as tools of inquiry. Secondly, that policies and proposals for social action be treated as working hypotheses, not as programs to be rigidly adhered to and executed. They will be experimental in the sense that they will be entertained subject to constant and well-equipped observation of the consequences they entail when acted upon, and subject to ready and flexible revision in the light of observed consequences. The social sciences, if these two stipulations are fulfilled, will then be an apparatus for conducting investigation, and for recording and interpreting (organizing) its results. The apparatus will no longer be taken to be itself knowledge, but will be seen to be intellectual means of making discoveries of phenomena having social import and understanding their meaning. Differences of opinion in the sense of differences of judgment as to the course which it is best to follow, the policy which it is best to try out, will still exist. But opinion in the sense of beliefs formed and held in the absence of evidence will be reduced in quantity and importance. No longer will views generated in view of special situations be frozen into absolute standards and masquerade as eternal truths.

JOHN DEWEY

The Public and its Problems (Chicago: Gateway Books, 1946), pp. 202-03

New Studies in Behavioral Science and Public Policy

These items are selected and annotated by the ABS staff in a periodic search of new issues of 250 journals and reviews, including about 100 that are published outside the United States, and from announcements and review copies of books and fugitive materials recently published. Some items of special interest are boxed.

ABRAHAMSEN, D. *The Psychology of Crime*. N.Y.: Columbia U. Press, 1960, \$6.00. A practicing psychiatrist describes the emotional and sociological factors acting upon the criminal and carrying him into action, on the basis of case histories, and analyzes various types of criminals and their crimes. Results support the oft-recognized argument that criminal rehabilitation calls for psychiatric and sociological methods.

BERLIN, I., "History and Theory: The Concept of Scientific History." *Hist. and Theory*, I (#1, '60), 2-31. "The attempt to construct a discipline which would stand to concrete history as pure to applied, is not a vain hope for something beyond human powers but a chimera, born of a profound incapacity to grasp the nature of natural science, or of history, or of both."

BRASIN, G.-P., "Etica dell'UNESCO." *Comunita Intl.*, XV (April '60), 319-36. Generally favorable evaluation of the scope and activities of UNESCO as a means of ameliorating undesirable social and economic conditions, hence indirectly of promoting political stability.

BUCHANAN, W., et al., "The Legislator as Specialist." *Western Pol. Q.*, XIII (Sept. '60), 636-51. State legislators are perennially confronted with decisions requiring knowledge of technical minutia, and they and their members have resorted to specialization. "This specialization is a reality; real in the perception of the legislators and real in its consequences for the laws that regulate society."

BURNS, A. L., "International Theory and Historical Explanation." *Hist. and Theory*, I (#1, '60), 55-74. Asks "how far the historical explanation of occurrences in international politics may proceed without explicit reference to theoretical laws and concepts" and suggests that "international theory may point to unrecognized problems calling for historical explanation, rather than play a necessary mediating role in the process of explanation."

BROWN, H., and J. REAL. *Community of Fear*. Santa Barbara: Center for the Study of Democratic Institutions, 1960 (on request; paper). Projects present trends of the arms race in the U.S. and the USSR into the future, with depressing conclusions.

CARRIGAN, P. M., "Extraversion-Introversion as a Dimension of Personality: A Reappraisal." *Psych. Bul.*, LVII (Sept. '60), 329-60. A review of recent research (since Eysenck, 1953); "current assumptions about the unidimensionality of the construct, and its independence from adjustment, cannot be justified," though the questions for future research are clearcut.

GRANCE, E., and J. ARNOLD, "The Effect of Professional Training, Experience, and Preference for a Theoretical System upon Clinical Case Description." *Human Relations*, XIII (Aug. '60), 195-213. Evaluation of clinical material by 533 psychiatrists, psychologists, social workers: "preference for different theories of personality failed to show a significant relationship to case description" but "regardless of accuracy, clinicians are characterized in their assessment of the concerns of a patient by certain kinds of biases which result in selective observation," factors such as length of experience, membership of a clinical discipline, etc.

ADLER, J., "Développements Récents des Rapports de la Sociologie et de la Pédagogie en France." *Intl. R. of Ed.*, VI (#2, '60), 163-75. Though French pedagogy is still oriented toward psychology, a new trend toward "socio-pedagogy" is making it possible to deal with educational problems in terms of social situations. "Just as social conditions influence educational systems both in their aims and in their structure, so also in their turn do the systems change the social conditions."

BERELSON, B. *Graduate Education in the United States*. N.Y.: McGraw-Hill, 1960, \$6.95. A comprehensive examination of the state of graduate education in America, with recommendations. The study is based upon systematic use of questionnaires and interviews of academicians, recent PhD's, deans, others. Author finds the system dynamic, bursting with self-criticism, well-oriented toward research, with a blurring distinction between the academic and the professorial. The "crisis" over teacher-scarcity by 1970 is held overstated. Stratification of graduate education is a fact, brought on by better schools, teachers students, and more funds jointly. Social origins of PhD's are diverse. Approves norm of 4-year doctorate, wants tightening of training programs, shorter dissertations, post-doctoral training, departmental choice of language requirements, abolition of final orals when only ceremonial, rationalizing of student finances, better recruiting of students, better teaching and writing training, stronger graduate deans.

COATS, A. W., "The First Two Decades of the American Economic Association." *Amer. Econ. R.*, I (Sept. '60), 555-74. Issues of controversy: social science vs. social reform, the ascendancy of science; the emergence of a midwestern opinion favoring policy orientation.

"Counting Heads in Two Hundred Lands." *United Nations R.*, VI (May '60), 6-7 ff. UN training and assistance in the "1960 World Census Program": censuses in 68 countries were taken 1955-1960, 134 more are scheduled through 1964.

DALTON, M. *Men Who Manage*. N.Y.: Wiley, 1960. Extensive first-hand research on relations between experts and administrators in business, official and unmentioned factors in promotion, etc.; "every firm in operation becomes a network of off-the-record understandings and personal commitments that catch up everyone—particularly the ambitious and impatient."

CANTRIL, H. *Soviet Leaders and Mastery Over Man*. New Brunswick: Rutgers U. Press 1960, \$4.00. Analysis and presentation of the Soviet principles about how the individual should relate to the state (and party). The basic Soviet view of human nature and of how to shape it to state ends are set forth. The psychological effects of the "thaw" at 1955-56 and its refreezing and the difficulties encountered in instilling some of the desired attitudes are related, but little hope is conveyed that the system has "self-corrective" contradictions that would move it toward freedom.

DELAVERNAY, E. *An Introduction to Machine Translation*. N.Y.: Praeger, 1960, \$4.75 (trans. from French). Historical and technical background, recent progress.

DEUTSCHMANN, P. J., and W. A. DANIELSON, "Diffusion of Knowledge of the Major News Story." *Journalism Q.*, XXXVII (Summer '60), 345-55. Data from studies of three different "news breaks" suggest regularities in the diffusion process and differences in the functions of the newspaper and broadcast media; the person-to-person "relay" of information seems of relatively limited importance.

DIAMOND, S., ed. *Culture in History*. N.Y.: Columbia U. Press, 1960 \$15.00. Fifty-two essays in honor of anthropologist Paul

Radin, in five sections: The Primitive World View; Approaches to Culture; Ritual, Religion, and Myth; History, Law, and Social Theory; and Language.

DIENA, L. *Gli Uomini e le Masse*. Turin: G. Einaudi ed., 1960 (paper; 1000 Lire). Analysis and presentation of the leisure patterns of 19 young workers of different types of factories and neighborhoods in a large city.

DORFMAN, R., "Operations Research." *Amer. Econ. R.*, L (Sept. '60), 575-623. Operations research is a prescriptive science, relying heavily on formal mathematical models; some "problems and pitfalls of determining measures of merit or objective functions" are examined.

DRAY, W., "Toynbee's Search for Historical Law." *Hist. and Theory*, I (#1, '60), 32-54. An attempt to rescue Toynbee's *A Study of History* from some of its most severe critics; "there is nothing intrinsically wrong with Toynbee's empirical methodology, and . . . apparent obscurities in his concept of empirical law could in principle be overcome," though arguing that given Toynbee's metaphysical principles, it is logically impossible to arrive at such laws.

DUMAZEDIER, J., "Ambiguïté du loisir et travail industriel." *Cahiers Intern. de Soc.*, XXVIII (Jan-June '60), 89-112. Relations between the concept and practice of leisure and industrial society.

DUNCAN, O. D. *Metropolis and Region*. Baltimore: Johns Hopkins U. Press, 1960, \$8.50. Studies providing cross-sectional views of the metropolis in the U.S. at mid-century.

DUNHAM, H. W., and S. K. WEINBERG. *The Culture of the State Mental Hospital*. Detroit: Wayne State U. Press, 1960, \$5.00. Their routines and attitudes, positing changes necessary for a more liberal and humanistic approach to administration.

FOGARTY, M. P., "The Rhythm of Change." *R. of Pol.*, XXII (Oct. '60), 451-65. An application of learning curve theory—"the social learning curve"—to history; "social change will tend to follow a certain pattern and to occur in steps or stages, partly because men cannot solve all their problems at once and partly because successive groups need to be drawn in and informed."

FORM, W. H., and D. C. MILLER. *Industry, Labor, and Community*. N.Y.: Harper, 1960, \$9.00. Analyzes external relationships among such organizations; outlines their historic relations, current structures, and suggests future developments.

FREEMAN, V. J., "Beyond the Germ Theory: Human Aspects of Health and Illness." *J. of Health and Human Behavior*, I (Spring '60), 8-13. "An analysis of health and illness in the man-environment frame of reference; and . . . a note on a rational approach to health and illness which involves the basic principles of psychodynamics."

CORSON, J. J. *Governance of Colleges and Universities*. N.Y.: McGraw-Hill, 1960. A management consultant moves his techniques into the academic world, blends them nicely with a broad political science approach of the "new school," and writes entertainingly about the several elements that cooperate and conflict in running an institution of higher learning, with a chapter on external forces bearing on the school. That the author often stops short of precise, commanding generalization is due to the fact that the five-foot shelf of books that should exist on this important subject is not there.

GIERER, W., "How the 'Gatekeepers' View Local Civil Liberties News." *Journalism Q.*, XXXVII (Spring '60), 199-205. Interviews with reporters and news sources in four California cities reveal a preoccupation with "craft conditions" among newsmen, major differences in definitions of news.

GOVACCHINI, D. L., "On Scientific Creativity." *J. of Amer. Psychoanalytic Assoc.*, VIII (July '60), 407-26. A study of eight highly creative physical scientists. For example, "If they became too enmeshed in ritualistic systems, strong reaction formations, or intellectualizing, they found they could not create"; "During creative phases they were aware of chaos and disorder and it became a scientific task to extract order from it." Concludes that "The creative operations of the ego . . . consist of a balance of primary and secondary process. This ego has the ability to bind the chaotic impulses emerging from the unconscious, fuse them with external reality, and refine and integrate the product. When this was achieved, a new segment was added to reality."

GROSS, L., "System Construction in Sociology." *Behavioral Sci.*, V (Oct. '60), 281-90. Uses definitions of necessary and sufficient conditions inherent in the logic of universal law to describe "the most familiar relation in a system of sociological generalizations, that of correlation or association among variables."

HARDMAN, D. G., "The Constructive Use of Authority." *Crime and Delinquency*, VI (July '60), 245-54. Incidents and arguments in support of the thesis that "Since one of the basic components of delinquency is a history of negative experiences with authority figures, one of the most beneficial services I can render to a delinquent is a new and constructive relationship with authority."

GOLDISH, S. S., "How Editors Use Research on the Minneapolis Dailies." *Journalism Q.*, XXXVII (Summer '60), 365-72. A pioneer research department serves two dailies; "We use research . . . to augment our knowledge of the readers and markets served by our newspapers and to assist in decision-making processes."

Acquisition of Values." *Psych. R.*, LXVII (Sept. '60), 317-31. A "reinforcement framework" for analyses of phenomena now termed identification introjection, and internalization, in the hope of simplifying terminology, encouraging more precise study, and integrating learning and personality theories; deals with the concept of conscience and the factors influencing its development as an example.

HOSELTZ, B. F. *Sociological Aspects of Economic Growth*. Glencoe: The Free Press, 1960, \$5.00. Essays on social structures and patterns affected by economic growth, particularly in urban areas, with a chapter on Asian urbanization and economic growth.

HURST, W., "The Law in United States History." *Amer. Phil. Society Proceedings*, CIV (Oct. '60), 518-26. Asks for "more adequate definition of the attributes of our legal order" to illumine numerous aspects of social events and processes.

KOGAN, L. S., ed. *Social Science Theory and Social Work Research*. N.Y.: Natl. Association of Social Workers, 1960, \$2.75 (paper). Proceedings of the 1959 Institute on Social Science, Theory, and Social Work Research.

JENNINGS, E. E. *An Anatomy of Leadership*. N.Y.: Harper, 1960, \$5.00. Patterns and concepts of leadership in contemporary society—"princes, heroes, and supermen."

KAPLAN, B., and S. WAPNER, eds. *Perspectives in Psychological Theory*. N.Y.: Intl. Universities Press, 1960, \$7.50. Essays on "experiences of inner status," functions of perceiving, selector-integrator mechanisms in behavior etc.

KISH, G. *Economic Atlas of the Soviet Union*. Ann Arbor: U. of Michigan Press, 1960, \$10.00. "A portrait of the Soviet Union of 1960, one of the world's leading industrial powers." Uses general and regional maps to show the Soviet economic structure; four maps of each of 15 regions indicate agriculture and land use; mining and minerals; industry; and transportation and cities. Notable is the movement to economic decentralization.

KORUT, H. "Beyond the Bounds of the Basic Rule." *J. of Amer. Psychoanalytic Assoc.*, VIII (July '60), 567-86. Reviews four recent psychoanalytic biographies, distinguishes three types of psychoanalytic investigations of creative minds and their creations: biography supported by psychoanalysis, "psychoanalytic pathography," and the psychoanalysis of creativity and its disturbances.

EICHER, J.-C., "La rentabilité de l'investissement humain." *R. Econ.*, VI (July '60), 577-608. Aspects of the concept of human investment, a model for its measurement and the determination of its results, and an application of the model to the American economy, 1930-1950.

HATCH, S., and M. FORES, "The Struggle for British Aluminum." *Pol. Q.*, XXXI (Oct.-Dec. '60), 477-87. Case study of a dispute over control of the British Aluminum Company, examining "the national interest and the activities of the participants in relation to it, as illustrating how economic decisions are made in Britain." The public bureaucracy was involved along with economic interests.

HILL, W. F., "Learning Theory and the

HILL, F. G., "Formative Relations of American Enterprise, Government and Science." *Pol. Sci. Q.*, LXXV (Sept. '60), 400-19. Surveys U.S. government support of science prior to the Civil War, finding it common from the War of 1812 onward, both on the part of the War and Navy Departments and other agencies such as the Coast Survey, and "extremely important for territorial and industrial expansion."

LASSWELL, H. D., "Approaches to Human Personality: William James and Sigmund Freud." *Psychoanalysis and the Psychoanalytic R.*, XLVII (Fall '60), 52-68. Differences and likenesses of approach, maintaining "that James and Freud expressed many of the most creative—not the decadent—potentials of our changing world; and that their achievements go beyond the explanatory relevance of many narrow interpretations of crisis."

INGLIS, B., "The Psychopath." *Encounter*, XV (Sept. '60), 3-14. Interpretation, sources, symptoms, increasing incidence, and possible forms of therapy—an account of present psychological knowledge of the psychopath.

LEWIS, A., "The Study of Defect." *Amer. J. of Psychiatry*, CXVII (Oct. '60) 289-305. A survey of psychiatric attitudes, thought, and research; "Few of us psychiatrists can have a clear conscience about mental defect. We have given it less attention than it required, and research has only belatedly concentrated on [its] pitiful and involved problems."

LUCKI, E., "The Role of the Large Landholders in the Loss of Roman Gaul: A Case Study in the Decline of the Roman Empire in the West." *Amer. J. of Econ. and Soc.*, XX (Oct. '60), 89-98. "Just as the class interests of the Roman senatorials contributed to the failure of the Roman Empire, so it led to the expulsion of the Visigoths, and to the preservation of senatorial governance, albeit under Frankish dominion. In sum, the interests of the large landholders were at the bottom of the entry of the Germans, the 'fall' of the Roman Empire in the west, the expansion of the Franks, and . . . the inception of the medieval social and political order."

LUMSDAINE, A. A., and R. GLASER, eds. *Teaching Machines and Programmed Learning*. Washington, D.C.: Natl. Education Assoc., 1960, \$7.50. Describes self-instructional test-scoring devices, teaching machines and programming concepts, devices contributed from military and other sources, and summarizes most recent work. Two trends are seen: mass production of low-cost devices for presenting well-tested programs for self-instruction, experimentation with electronic machines for research purposes.

LURIA, A. R. *The Nature of Human Conflicts*. N.Y.: Grove Press, 1932, 1960, \$2.45 (paper, trans. from Russian). A classic Russian work, subtitled "Emotion, conflict, and will; an objective study of disorganization and control of human behavior," with physiological, pathological emphasis.

MACHOL, R. E., ed. *Information and Decision Processes*. N.Y.: McGraw-Hill, 1960, \$5.95. Twelve papers on computation in decision-making, sequential decisioning, statistical decision theory in engineering, etc., by mathematicians, an engineer, a philosopher, and an economist.

MAHAR, P. M., "A Ritual Pollution Scale for Ranking Hindu Castes." *Sociometry*, XXIII (Sept. '60), 292-306. Responses to the Ritual Distance Interview suggest that "there are implicit in the cultural ideology of caste uniformities and regularities both in criteria for ritual ranking and in the ritual rankings themselves."

KERR, C., et al., "Industrialism and Industrial Man." *Intl. Labour R.*, LXXXII (Sept. '60), 236-50. Features of industrialization common to all nations, the different roads to industrialism, and the types of elite likely to assume leadership in the process in different circumstances; the future will see a "pluralistic industrialism . . . , a dynamic society which, marked by complex and conflicting pressures, will develop a common cultural consensus." The state will not wither away but will handle conflicts among different power elements.

parents." The common biological matrix has never completely disappeared, however; "Communication takes the place of the symbiosis, but man never becomes an . . . independent ego."

LEDRUT, R., "Sociologie de la Coopération." *Cahiers Intern. de Soc.*, XXVIII (Jan.-June '60), 137-46. Proposals for studies of the sociology of cooperative movements, both international comparisons and in relation to other sectors of economic life.

LEHMBROCK, J., "Die Regeneration der Städte." Criteria for housing development and urban planning in terms of mass preferences and expectations.

JACO, E. G., "Problems and Prospects of the Social Sciences in Medical Education." *J. of Health and Human Behavior*, I (Spring '60), 29-34. Failures in communication have been rooted in the nature and orientation of the medical sub-culture, the role-image of the physician, the nature of the medical curriculum, and the sometimes marginal and nebulous nature of the social science disciplines themselves. On the other hand, the "biological sciences of medicine are insufficient to train the physician to cope with the socio-cultural and personal components of medical care or to equip him to fulfill his role and status obligations in his relationships with his colleagues"; sociology, cultural anthropology are needed in medical school curriculums.

MANN, F. K., "Institutionalism and American Economic Theory: A Case of Interpenetration." *Kyklos*, III (#3, '60), 307-26. The roots and status of American Institutionalism; in its new form, "Neo-Institutionalism," it has adopted a modicum of generalizations, and has interpenetrated with opposing schools, notably the Neo-Classical.

MEERLOO, J. A. M., "Who are These: I, Me, My Ego and Myself?" *Psychoanalysis and the Psychoanalytic R.*, XLVII (Summer '60), 83-96. "Ego development in man may be seen . . . as a demarcation and defense against the biologically necessary symbiotic dependency of man . . . on his

MENZEL, H., "Innovation, Integration, and Marginality: A Survey of Physicians." *Amer. Soc. R.*, XXV (Oct. '60), 704-13. A preliminary study suggests that innovations are not necessarily adopted most readily by marginal men; different innovations are adopted first by individuals in different positions in the social structure.

MOERS, C. N., "The Next Twenty Years in Information Retrieval." *Amer. Documentation*, XI (July '60), 229-36. Historical perspective, an interpretation of machine retrieval as "education of the customer," which, with related human-machine relationships, "will lead to machines which can provide essays on any given subject upon request."

MORLAT, G., "L'incertitude et les probabilités." *Econ. Appliquée*, XIII (Jan.-March '60), 37-53. Justifications for the use of probability calculations to clarify or resolve economic problems involving uncertainty; if probability statements are excluded, no logically satisfactory criteria or choice for conditions of uncertainty can be established.

MOULIN, L., "Origines des techniques électorales." *Contrat Social*, IV (May '60), 172-78. Traces electoral techniques from the medieval communes and religious orders down to the present, emphasizing their connections with the dicta and practices of the church.

MURPHY, M. E., "Computer Developments in the Soviet Union." *J. of Acad. of Management*, III (Aug. '60), 99-106. A summary of existing material: Soviet computer applications are proceeding apace, often in conjunction with automation.

MUSSON, A. E., and E. ROBINSON, "The Origins of Engineering in Lancashire." *J. of Econ. Hist.*, XX (June '60), 209-30. The 18th century origins of the new mechanical engineers and how they established the necessary technological basis for "take-off"—notably the manufacture of iron machinery, using machine tools.

"Negro Education in the United States." *Harvard Ed. R.*, XXX (Summer '60), 179-305. Eight articles representative of the major developments in Negro education, including "Schools, Courts and the Negro's Future" by J. A. Morsell; "Education Opportunities and the Negro Child in the South" by C. L. Miller; "The Scholastic Performance of Negro and White Pupils in the Integrated Public Schools of the District of Columbia" by C. F. Hansen; and "Events in Southern Education Since 1954" by M. Wall (in 11 southern and border States there has been either no integration or integration affecting less than one per cent of Negro students).

PAPAIOANNOU, K., "The Consecration of History: An Essay on the Genealogy of the Historical Consciousness." *Diogenes*, #31 (Fall '60), 29-35. Man's experience of freedom and of its relationships with divine providence and grace brought him a sense of history, in that "the social world could appear and place itself above the neutral world, without . . . opposing it."

PATTERSON, F., ed. *The Adolescent Citizen*. Glencoe: The Free Press, 1960, \$6.00. Chapters covering the backgrounds of practice in adolescent education for citizenship; discussions by behavioral scientists on the implications of available research in sociology, social psychology, and communications for the teaching and learning of democratic citizenship; and suggestions of new research and action perspectives.

PLAMENATZ, J. P. *On Alien Rule and Self-Government*. N.Y.: Longmans, 1960, \$3.75. Analysis of the sources of Asian and African desires for self-government, postulates ultimate outcomes of its realization.

"Proceedings of the Fifteenth Annual Conference of the American Association for Public Opinion Research." *Pub. Opin. Q.*, XXIV (Fall '60), 465-530. Remarks on public opinion pressures on education today; interviewing the reluctant respondent; new developments in advertising and market research; research in health and medical care; the mass media and popular culture; research into climates of opinion; and the image of America abroad.

RÖSTEN, E., "The Intellectual and the Mass Media." *Daedalus*, Spring '60, 333-46. Examines the intellectuals' clichés about the deficiencies of the mass media, suggests "that intellectuals tend to judge the highbrow by its peaks and the nonhighbrow by its average," comes to rest by citing the "compulsive egalitarianism of eggheads," which involves the paradox of "a contempt for what the hot pol. . . enjoy, and a kind of proletarian ethos that tacitly denies inequalities of talent and taste."

LUNDBERG, G. A., "Quantitative Methods in Sociology: 1920-1960." *Social Forces*, XXXIX (Oct. '60), 19-24. Principle issues: whether the quantitative-qualitative distinction among aspects of phenomena was a real one; the controversy of "case study" vs. statistical method; and the problematic relations of attitudinal and opinion data to other types of social behavior.

MARCSON, S. *The Scientist in American Industry*. Princeton: Princeton U. Industrial Relations Section, 1960. A depth portrayal of problems encountered by the industrial research scientist, based on extensive interviews with research scientists and administrators. Traces the scientist's career development, professional aspirations, relations with colleagues in team work organization, and reactions to managerial authority. Stresses the kind of accommodation which must be made in research administration between two contradictory concepts of organization—"one based upon executive authority exercised by the corporation and the other stemming from the natural inclination of the scientist to respect the authority of his professional colleagues."

SARASON, I. G., "Empirical Findings and Theoretical Problems in the Use of Anxiety Scales." *Psych. Bul.*, LVII (Sept. '60), 403-15. Some consistencies and inconsistencies in anxiety research, some uncontrolled and confounding variables that may have led to discrepant findings.

SARNOFF, I., "Psychoanalytic Theory and Social Attitudes." *Pub. Opin. Q.*, XXIV (Summer '60), 251-79. Uses a conceptual framework interrelating the concepts of motive, conflict, ego defense, and attitude to explore the manner in which specific attitudes may contribute to the reduction of tension generated by specific motives, and "the functional relationships between attitudes and both consciously acceptable and consciously unacceptable motives."

OSTOW, M., "The Psychic Function of Depression: A Study in Energetics." *Psychoanalytic Q.*, XXIX (July '60), 355-94. "The depression syndrome is a reaction to a loss, and it governs attempts to retrieve the lost object." Among its components are psychic pain, which motivates efforts to retrieve the object; physical changes that communicate the patient's helplessness and need for love and protection to others; and inertia and a sense of emptiness which "prevent flooding of the ego by instinctual impulses which, in the absence of the lost object, cannot be gratified."

SEBEEK, T. *Style in Language*. Cambridge and N.Y.: Technology Press and Wiley, 1960. Proceedings of a conference on verbal style and the literary process, in which representatives of anthropology, folklore, linguistics, literary criticism, philosophy, and psychology attempt to clarify such concepts as style, literature, poetic language.

SHARP, W. R., "Political Science and the Promotion of Peaceful Co-operation." *Intl. Soc. Sci. J.*, XII (#2, '60), 197-207. Criticizes the lack of planning underlying the UNESCO peaceful cooperation project, suggests particularly that "critical surveys of the present state of the scientific literature relating to the objectives of peaceful co-operation programme" should

have been undertaken, with the advice and assistance of political scientists.

SMYTHE, H. H., and M. M. SMYTHE. *The New Nigerian Elite*. Stanford: Stanford U. Press, 1960, \$5.00. Preparation of the elite for self-government, based in part on 156 interviews with elite members. Increased participation in politics, in the direction of economic life, in the professions, and in various social functions have involved problems of adjustment to traditional society and to British colonial structure.

Suggested Research Topics: Small Business Management, Operation, Finance. Washington, D.C.: Small Business Admin., 1960 (booklet). A budget of 100 topics for faculty and student research, proposed by educators, businessmen, editors, etc., under 23 classifications such as company organization, growth, continuity; education for management; labor relations; etc.

SWEENEY, J. J., "The Museum in a Mass Society." *Daedalus*, Spring '60, 354-58. The mass media pose little threat to the genuinely creative artist; "he provides what the mass media fail to give: standards of quality and integrity for our culture as a whole."

SWIANIEWICZ, S., "Coercion and Economic Growth." *Pol. Q.*, XXXI (Oct.-Dec. '60), 453-65. The extent, uses, and economic role of forced labor in the Soviet Union during the first three Five-Year Plans, and certain alternatives to such forced saving.

TINBERGEN, J., "Teoria dell'optimum regime." *L'industria*, IV (April '60), 155-71. The "optimum regime" probably has characteristics midway between those of capitalism and Communism; certain physical and psychological traits of a society, related to welfare needs, are analyzed to arrive at some of these characteristics.

PIZZORNO, A. *Comunità e Razionalizzazione*. Turin: G. Einaudi ed., 1960 (paper; 1500 Lire). Intensive study of a new industrial suburb of Milan, its growth, demography, industry, labor troubles, and politics, on the basis of extensive questionnaires of a 430-person sample of the 7,350 population. The meaning of work, nature of the family, role of the church, leisure, cultural values, and voluntary associations are treated. The conflicts and contradictions between the base and superimposed communities are numerous, and unresolved; a vital formula and structure are needed.

natural ideology of underdeveloped societies" and, in contrast, "liberalism as practiced and preached in the West can appeal to a much narrower range of interests and sentiments and is at a disadvantage in competition."

UNESCO. *Basic Facts and Figures*. N.Y.: Columbia U. Press, 1960, \$3.00 (paper). International statistics on education, culture, mass communication, etc.

UN STATISTICAL OFFICE. *Handbook on Data Processing Methods*. N.Y.: Columbia U. Press, 1959, \$1.00 (paper). Electronic data processing and punched card systems.

UHR, L., and J. G. MILLER, eds. *Drugs and Behavior*. N.Y.: Wiley, 1960. A progress report on the development of objective experimental methods for determining the effects of psychoactive drugs on human beings, including articles on general theoretical and methodological issues, reports of specific research, and comments on legal, social, and moral questions.

ULAM, A. B. *The Unfinished Revolution*. N.Y.: Random House, 1960, \$5.00. An essay on "what makes Marxism alive and relevant in certain societies, while elsewhere socialism and communism remain the creeds of insignificant sects or intellectual coteries." Russian Communism is now in crisis, but Marxism itself "is the

U.S. SENATE COMMITTEE ON FOREIGN RELATIONS (86th Congress 2nd Session). *Hearings on Possible Nonmilitary Scientific Developments and their Potential Impact on Foreign Policy Problems of the United States, Worldwide and Domestic Economic Problems and their Impact on the Foreign Policy of the United States, and United States Foreign Policy-Africa (Part I)*. Washington D.C.: USGPO, 1960 (paper). Wealth of statements and factual data.

U. S. SENATE SUBCOMMITTEE ON DISARMAMENT (86th Congress 2nd Session). *Chemical-Biological-Radiological (CBR) Warfare and its Disarmament Aspects*. Washington, D.C.: USGPO, 1960 (paper). History, past and future uses, and U.S. and Soviet capabilities; "inspection measures for verifying any limitation on the production or development of chemical and biological weapons have a low degree of reliability. If these weapons are to be included in future disarmament agreements much more must be known about control features."

TANENHAUS, J., "Supreme Court Attitudes Toward Federal Administrative Agencies." *J. of Pol.*, XXII (Aug. '60), 502-24. A framework of conceptions about the Court and its personnel, a series of hypotheses stemming from it, and their testing by statistical methods; for example, the Court tended to favor federal agencies over private parties to a significant degree. An important extension of scientific method into juridical analysis.

VAN DEN HAAG, E., "A Dissent from the Consensual Society." *Daedalus*, Spring '60, 315-24. Disagrees with "those mass culture optimists who favor the wide presentation of 'refined' culture through the mass media," in particular those emphasizing cultural objects, such as Shils in his "refined," "mediocre," and "brutal" classification. Suggests that "high or refined culture . . . is best preserved and developed by avoiding mass media" and that some advantages of mass production be given up for the sake of greater individualization.

VAN NIEL, R. *The Emergence of the Modern Indonesian Elite*. Chicago: Quadrangle Books, 1960, \$6.75. "Social change among the leader group of Indonesian society," 1900-1925.

WEAVER, W., "The Imperfections of Science." *Amer. Phil. Society Proceedings*, CIV (Oct. '60), 419-28. Why science does not entirely deserve the respect, prestige, and admiration it possesses: the unresolvable disagreements concerning the relationship of scientific thought to reality; "the explanations of science have utility, but do in sober fact not explain"; the shakiness and incompleteness of logic; the will-o-the-wisp concept of objective truth; and the "charming capriciousness" of individual events.

WEBBER, E., "Personal Privacy—A Case of High Policy." *Pub. Admin. R.*, XX (Summer '60), 158-60. A postal employee's attempt to achieve restroom privacy resulted in nine months of buck-passing involving his Congressman, the Postmaster General, *et al.*; overcentralization is held responsible.

WHITING, A. S., "The Logic of Communist China's Policy: The First Decade." *Yale R.*, L (Sept. '60), 1-17. Proposes careful, constant study of Communist China. "Such study would be of no political worth were this regime wholly enigmatic, or genuinely fanatic. Its first ten years of policy, however, prove just the opposite. It is a rational, calculating regime, pursuing ends and adopting means within a clearly defined framework embracing both Chinese and Communist components. Its actions are not predictable. . . . However, they are susceptible to analysis, and with time and experience, to projections of probability."

WOLFINGER, R. E., "Reputation and Reality in the Study of 'Community Power.'" *Amer. Soc. R.*, XXV (Oct. '60), 636-44. A sweeping critique of the current practice of ranking community leaders according to their reputations for power.

YSGVE, V. H., "A Model and an Hypothesis for Language Structure." *Amer. Phil. Society Proceedings*, CIV (Oct. '60), 444-66. The behavior of a model for sentence production leads to a hypothesis and to a number of specific predictions concerning the types of syntactic structures to be expected in language; the predictions are used to examine the structure of English and account for much of its apparently non-functional complexity.

ZAX, M., and A. KLEIN, "Measurement of Personality and Behavior Changes Following Psychotherapy." *Psych. Bul.*, LVII (Sept. '60), 435-48. A survey of experiments and theoretical papers, distinguishing between criteria based on client behavior in the therapy situation or his personal report, and criteria based on the client's behavior outside the therapy situation. "We may have a variety of 'valid' measures of the outcome of psychotherapy. The judgement of whether these are useful measures, however, must be based upon our evaluation of the purposes for which they are valid."

VUCINICH, A., "Soviet Ethnographic Studies of Cultural Change." *Amer. Anthropologist*, LXII (Oct. '60), 867-77. Cultural change is the central theme of Soviet ethnography; recent studies have focussed on the diffusion of urban traits in the rural communities, particularly the *kolkhozy*, and the extension of the Russian socialist-urban way of life to the cultures of ethnic and tribal societies. Two underlying moralistic principles appear to guide Soviet ethnographers: demands that so-called primitive societies be preserved in their indigenous form are unscientific and unethical; and the rejection of assimilation as an officially sponsored and enforced policy.

Aphorisms for the Ambitious

ANONYMOUS (edited by GORDON TULLOCK)

Propositions of applied social science are today more numerous but usually no more precise than those of the seventeenth century. Gordon Tullock, of the Department of International Studies at the University of South Carolina, introduces a rare collection of aphorisms as follows:

*"In 1616 an unknown French courtier published anonymously A TREATISE ON THE COURT WITH GUIDANCE FOR THE COURTIER, a manual for men who wished to 'get ahead.' It was reprinted in 1617, 1619 and 1622, and translated into English, German, and Latin, which gives some indication of how widely it was read by aspiring politicians of the time. Political theorists, who in those days were primarily interested in the ultimate problems of sovereignty, seem to have more or less ignored the book. Modern social scientists, with the interest in the actual functioning of political structures which is such a prominent feature of modern thought in this field, should find much of interest in the work. The following brief excerpts show the general approach of the anonymous author, who was closer in spirit to Machiavelli than to Castiglione."*¹

THOSE THAT LOOK towards the Court, do not all fix upon the same Ends; some the Hope of Gain, and others the Desire of Honor, leads; the Ambition of Rule draws not a few; and very many steer that Course, merely out of a busy inclination, to the Engrossing, Crossing, or interposing in other men's affairs; while the number of those is very small, who Primitively intend the Honor, Safety and Advantage of the Prince.

But though their Ends be diverse, yet the way to attain to whatever End any man there has pitched upon, is but one, and Common to all that move in that Sphere, to wit, the Favor of the Prince; in obtaining which the industry, and labor of all Courtiers is employed.

But that they who desire to become Acceptable to the Prince, ought to sooth him in all his Inclinations, is not only a thing publicly granted, but also authorized by the daily practice of Courtiers. An honest man will wonder at it, and think that by this Rule that teaches us to Humor all the dispositions of the Prince, he is shut out from Court; since Princes often run courses much astray from the paths of Reason and Justice.

Truly, he that desires to lead a life altogether Innocent, and Remote from the conversation of men addicted to vice, and to their own Corrupt Inclinations, shall in my opinion, do very well to absent himself from that great Courtezan, the Court (if I may so call it) that sometimes Corrupts men of the greatest Integrity and Innocence.

ARISTIDES THE JUST, both in name and nature, being by the Athenians made Treasurer; in the first place, according to his own Disposition, and the duty of an Honest man, went about to hinder all those that were under his charge, from robbing the Treasury; whereupon they presently accused him of Cheating and Bribery, as one of the Corruptest persons that ever bore that office; inasmuch, that he had to have been condemned: But being at last quit, and his office still continued, he determined to imitate his Predecessors, and wink at the thefts of his Companions; by which means, he presently reobtained the name of a Good man, in the opinion of all.

OUT OF THE HUMOR of the Prince and the Nature of the affair, we must first make a judgement, whether it be fit, or safe, when

¹ The excerpts are taken (with modernized spelling) from Edward Walsingham's translation of 1648. The work went through a number of editions under such titles as *Arcana Aulica* and *Walsingham's Manual*, but it is now quite rare. It will be reprinted in Spring 1961 by the University of South Carolina Press under the title *A Practical Guide for Ambitious Politicians*.

he asks our Counsel, to deliver freely our opinions; or to humor him in his inclinations.

PRINCES ARE PLEASED to have those about them, in comparison of whom, themselves, though bad God knows, seem to be good.

Wherefore it is an Old art of Courtiers, not to take unto themselves any Companions, but such as in Virtue and Prudence they shall much excel, to the end, that in comparison of these, their own Lustre may so much the more Appear.

LEARN HERE, Warily we must trust Princes, of whose Steadiness we are not assured; for often upon a light occasion, they are wont to Prostitute their Servants to the will of their Enemies.

An Artifice not much unlike to this, was that which Gerlachus, Archbishop and Elector of Mentz used, when he intended to create Adolphus of Nassau, his Kinsman, Emperor; He knew that those Princes that stood for the Empire (for which a Governor was now a choosing) were Divided among themselves, which Discords and Factions, he to make use of, dealt thus with the Electors severally apart. He tells Wencelaus King of Bohemia, That the Votes of the Electors, for the most part, would favor Albert, Duke of Austria, Wenceslaus' Enemy: But if he were certain of Wenceslaus' concurrence, he was ready to hinder it. Having thus won Wenceslaus, he sets upon the Duke of Saxony, and tells him, that his Enemy Brunswick was like to carry it; and then assures the Palatine, That Wenceslaus (at that time Hated by him) unless prevented, was like to Defeat them all. So promising to oppose every man's Enemies, he Circumvented them all; making by that means, his Kinsman Emperor, who if he had been first Propounded, had without doubt been rejected by the Common Consent of all.

AND FOR as much as concerns the Secrets of Princes, I think they do very well, who Pry not into them; and who, if their Office exalt it not at their hands avoid the bare knowledge of them: For if you be the Only person, to whom they are imparted, and Fame (which often makes witty Conjectures) chance to scatter anything like to them, you cannot avoid the suspicion, that

the Secret came out by you: And although the Prince perhaps has imparted it to some one else, yet it may fall out so, that he has forgot; or else, that he is more Confident of the other man's silence, and so the soil remains upon you still.

IN CALUMNY, two things are to be Observed; the first is, Whether it be sufficient to Deprive him of the Prince's Favor? the second is, Whether it be Probable?

FROM SLANDERS, let us come to praises, of which also as we have Hinted before, there is great use in Undermining others; for many men do by this means, Palliate Secret Hate, Envy, and Emulation, to the end, they may Deceive more Easily.

THE JEALOUSY and Envy of Princes, has been so formidable to some, that they had rather be Lessened to their Loss, than incur their Envy by doing their business Prosperously and well. Publius Ventidius fearing the Envy of Mark Antony, under whom he served, Contended himself to have beaten the Parthians by Three Victories into Media, and would not prosecute his Good Fortune any farther.

HE IS DESERVEDLY to be remembered among the Darlings of Fortune, whose Authority and Interest being great with one Prince, continues so with his Successor. It is truly a thing very Rare in Courts, because He that is to Succeed, is for the most part Suspected by the Present Prince; and therefore, they who Manage his Affairs, are necessitated to be Adverse to the Heir Apparent; from when, commonly, Deadly Enmities arise. Besides this also, the Succeeding Prince has, for the most part, Servants Known, and Endear'd to him, by a Long Fidelity, and Many Services; for whose Advancement to Dignity, that he may make way, he will Ordinarily, either of his own Accord, or by the Persuasion of those that desire to Succeed, lay aside the Servants of the Deceased Prince.

Yet there are some, whom either the State of Affairs, for which they are more Able, and Apt than Others; or some other Dexterous Quality, and Taking Humor, does so Insinuate them into the succeeding Prince, That one Prince Dying, they lose nothing thereby, but his Person. Marco, that he might

obtain Caligula's Favor, sets his own Wife Ennia upon him, to Inveigle him with Love, and Bind him in a Marriage. The same man Commanded Tiberius to be Smothered with Clothes, as he was Sick and Dying, as Tacitus affirms. Julian the Emperor retained Arbetio still, because he thought him Useful, although he hated him for his Pride, and Turbulent Disposition. And Valentinian, after him, Called the same Man to him to Oppose against Procopius.

HE THEREFORE that will Provide for his Safety, must Make himself at Court, one Friend or more, to Defend him in his Absence against the Dangerous Assaults of Calumny; But withal, he must take Care they be Persons of Condition and Honor, or at least, Men of Interest, and such as have Access to the Prince's Ear, as Readily as our Enemies. I confess, the Store of such Friends at Court, is but very Small, where it is the Usual Custom, almost among all, if not to Persecute their Companions themselves, at least to Suffer Them to be Oppressed by Others. But yet it happens sometimes, That there is One that either out of Gratitude for Benefits Received, or With a Desire of Obliging us, or else out of Hatred, Towards our Accusers, will Perform that Office.

Yet although I would not have our Courtier be Besieged with too Great a Throng of Friends and Servants, I would not have him neglect to make Many Creatures and Followers; not to serve him in his Pomp, but to Support and Comfort him, if any Adversity should happen. For although an Adverse Fortune finds Few of these Prove Friends, yet there are, for the most part, Some among them, who will Endeavor to Shelter and Assist you; if not out of Friendship, yet out of Respect to their own Advantage, which they may well expect from the Restoration of your Fortune.

AMONG THE PRINCIPAL rules of a Courtier's Prudence, this is one, To Discover and

Smell out betimes, the Change and Diminution of the Prince's Affection towards us, to the end, that the Knot of love between you, may rather be Gently untied, than cut in sunder. For so many times the Cause of our Distaste being Removed, or Worn away, there is sometimes an easy return for us to our former Favor, especially, if we seem, either not to Remember, or not to have Understood the Injury.

EXPERIENCE often Teaches us, that very Great Services have in Courts been the Ruin of those that have Performed them; by reason, that Princes are wont to Hate, whom they cannot Requite. They will not be indebted to a Subject, and therefore do Fly the Sight of These that have Exceeding well Deserved of Them, as if they did with their Looks Reproach them of Ingratitude.

Better to be Obligated to Princes than to have them Obligated to us: Because they believe, Whoever they have Obligated, do wish well to them while He that they are Indebted to, because he is Believed not to Love the Prince that has Denied him, what he Pretended to is Recompensed only with Hate.

THERE ARISING a Dispute once between Favorinus the Philosopher, and the Emperor Adrian, about some word, wherein the Philosopher at last seemed to yield; his Friends wondering at it, he said, I am not Ashamed to be Overcome in Knowledge by Him that Commands Thirty Legions.

OUT OF our Discourse hitherto, it is evident, how little Certainty is in all the Greatness and Favor at Court; Wherefore, the best Counsel that can be given to all Courtiers, is; To Prepare Themselves for their Fall; for although it is Thought a more Generous Thing to Fight, than to Flee, when you are once entered these lists; yet if you are to do it with Greater Hazard of Danger, than Hope of Success, it is not Indiscreet to Sound a Retreat Betimes, and, in Imitation of the Parthians, to Fight Flying.

"Speaking of long run analysis, this *long run* is a misleading guide to human affairs. In the long run we are all dead."

JOHN MAYNARD KEYNES

Language and National Character.

Language and Milieu. When linguists analyze the syntactical, morphological, lexical, and even the phonetic structure of a language, when they plumb its richness, its faculties for expressing human thought and feelings, when they speak of the character or even of the genius of a language, they have quite often been tempted to draw from their linguistic observations some conclusions about the character, the genius, and the moral and spiritual faculties of this or that nation. There certainly is a relation between language and the mind and milieu of those who speak it, whether they be individuals, a people, or a social or cultural class. For example, it is very evident that the wealth of thought, cultural level, and even mental "set" are more or less completely reflected by vocabulary, syntax, and probably even morphology—but scarcely at all by the phonetic system.

We need only to leaf through a dictionary of the Livonian language to determine that the Livonians are pre-eminently a people of fishermen and sailors, and that, in contrast to the Estonians, neither agriculture nor urban life plays an important role in their existence. The same holds true for the well-known abundance of vocabulary among the Arabs and the Lapplanders concerning, respectively, the different species of camels and reindeer; the reverse would be quite surprising. Let the reader compare the great literary languages—French, English, German, etc., and above all the languages of the elites—with those of the Australian or Brazilian aboriginals. In certain respects the languages of the latter may surpass even the languages of civilized peoples, in their capability for designating and indicating particular shades or meanings or subtleties. As a whole, however, the languages of civilized peoples are infinitely superior to those of aboriginals, in terms of the abundance of their vocabulary, the wealth of their phrasing, the flexibility of their grammar, and often in their auditory beauty.

Language and Temperament. On the other hand, the mental "set" of a people is influenced by their language. For instance, men's notions of honesty sometimes depend on the word they use. A European "finds" a lost object and seeks to return it to its possessor, who is, in his eyes, its true owner. For the Vietnamese, on the contrary, the true owner is not the one who loses but the one who finds, because in his language, in effect, "to find something," expressed by *du'ô'c*, means "to obtain in a manner to own."

Apart from this there is the still more curious and surprising phenomenon that language influences not only the thought, the mental "set," but also the whole psychic nature, the emotivity, and the temperament of the one who is speaking. Thus one can observe at international congresses that the same orators, when using different foreign languages, experience certain changes in the ways they manifest their feelings in connection with the language they are speaking—changes that are revealed by their facial expression, their posture, and their gestures.

ANDRUS SAARESTE

"Quelques remarques sur le rapport entre la structure d'une langue,
particulièrement de son vocabulaire, et la caractère de la Nation"
Revue de Psychologie des Peuples, No. 2, 1959, pp. 189-97

IN THE NEWS

continued from p. 2

FOUNDATIONS • In 3rd quarter '60, Rockefeller F. granted \$345.5M for social sciences. Major grants include \$87.7M to U. of Philippines for research and training in pub. admin.; \$75M to Colegio de México's new *Center for Intl. Studies*, which will carry out research and training in econ. theory, analysis, pol. theory, govt., public intl. law, and intl. organization; \$60M to intl. group of scholars at Free U. of Brussels to study recent European, U.S. econ. policies and their relations to objectives of the North Atlantic Community; \$36.5M to train Brazilian economists at U. of Rio Grande do Sul. • Individual Rockefeller grants include \$4.5M to M. S. McDougal (Yale) to complete a study of public order of outer space; \$4.1M to D. Lowenthal of *Amer. Geog. Society of N.Y.* for research on historical background of institutions and values in Lesser Antilles; \$3.5M to W. P. Strassman (Mich. State U.) for research in Mexico on "appropriateness of factor proportions in selected industries"; \$10M to D. V. Glass and *Population Investigation Committee* (London School of Econ. and Pol. Sci.) for research on demographic changes in Great Britain, 17th-19th centuries; also \$10M to *Inst. for Strategic Studies* (London) for scholars conducting research in U.S., Europe, on intl. security. • Recent Ford F. grants include \$55M to *Getulio Vargas F.*, a Brazilian business research center; \$120M to *Amer. Assoc. of Collegiate Schools of Bus.* to expand its *Intercollegiate Case Clearing House* program; \$100M to Queen's U. (Ontario) for research, other costs at its *Inst. for Econ. Research*. • Numerous Ford grants for study of youth and delinquency include \$700M for experiments, action projects at youth studies centers at U. of S.C., Syracuse U., elsewhere; \$280M to N.J. Dept. of Institutions and Agencies, Juvenile Court of Jefferson Cty., Ky., for experiments in rehabilitation of delinquent boys in different settings; also \$2.5M each to 56 younger scholars at 25 institutions for individual research on juvenile delinquency. • Ford also gave \$295M to Brown U. for grad. training program in regional econ. development, \$350M to Syracuse U. *Maxwell School of Citizenship and Pub. Affairs* to administer special assistance program for an admin. staff college in W. Pakistan. • Among recent Carnegie Corp. grants were \$43.2M to *Brookings Inst.* to appraise methods of federal financial assistance to State, local govts.; \$38M to U. of Mich. for research on organizations; \$12.5M to Yale for a study of cultural values and political processes. • New chmn. of the Duke Endowment is T. L. Perkins, former board chmn. of Amer. Cyanamid Co.; the Endowment has assets of \$430 million. • *Foundation Library Center* (New York) has begun publication of bimonthly *Foundation News*, \$3 per year.

ON THE COVER: New developments in communications technology, some of which are pointed out by Frederick Kappel in "Communications Today and Tomorrow," are part and parcel of a new social invention complex. In coming decades, social scientists in communications research will have to deal with the effects of instantaneous television and radio transmission from any point on the globe to another via systems of orbiting satellites—effects that may range from attempts at propagandistic suasion to intimate intercultural contact on a mass scale. Political scientists and legal theorists will be involved in intensified study and debate concerning international implications of "spy in the sky" satellites. The financing, development, control, and regulation of the new means of communication present problems that will concern both political scientists and economists.

Some of the experimental "hardware" of satellite communication appear on the cover in a sketch by Tom Hill, courtesy of the Bell Telephone Laboratories' publication, *Reporter*. The first extensive ground-satellite-ground communication experiments have reflected messages from Goldstone, California, off the Echo satellite (right center; an aluminized, orbiting balloon that subsequently may be replaced by instrumented communication satellites) to a horn antenna (left center) at Holmdel, New Jersey. Other items on the cover include a space capsule (far right), the cloud-photographing Tiros weather satellite (second from right), the Titan ICBM, and a typical radar receiver; Bell Telephone Laboratories have played a major role in the development of all these devices.